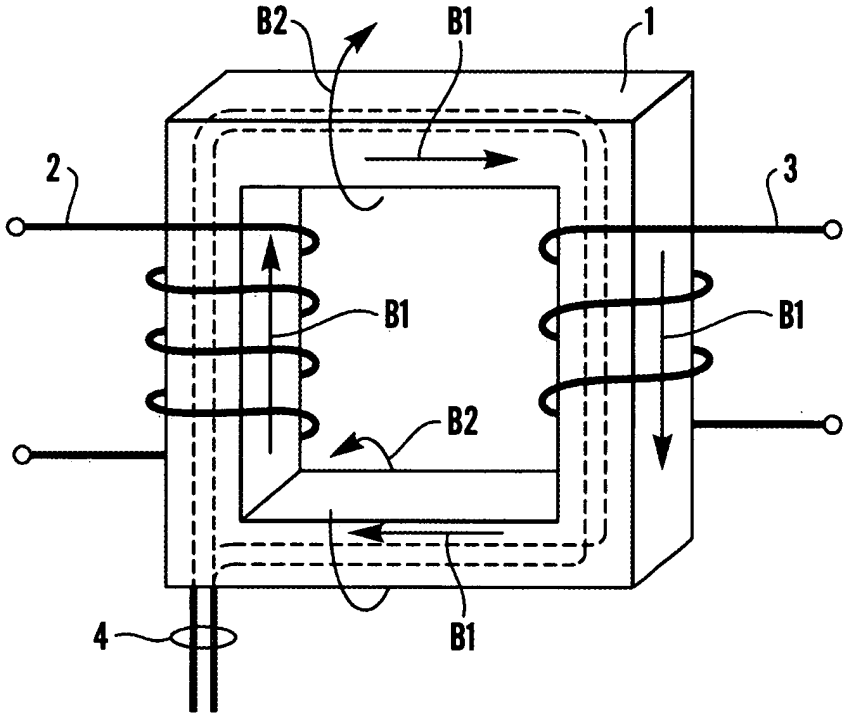


Fig. 1a

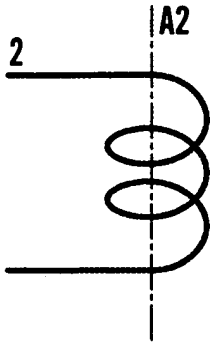


Fig. 1b

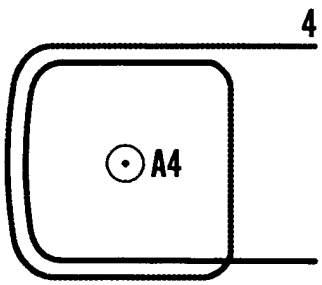


Fig. 1c

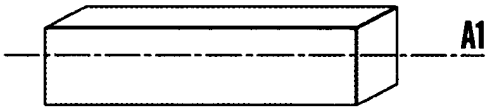


Fig. 1d

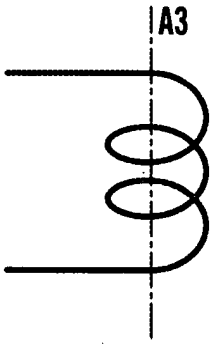


Fig. 1e

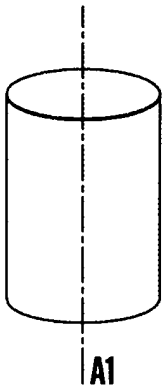


Fig. 1f

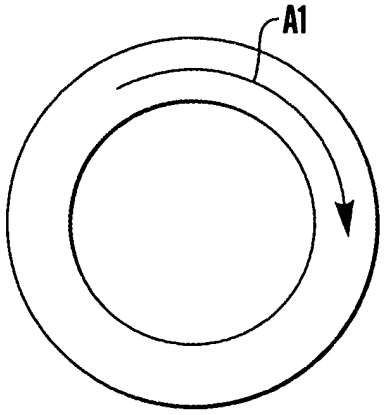


Fig. 1g

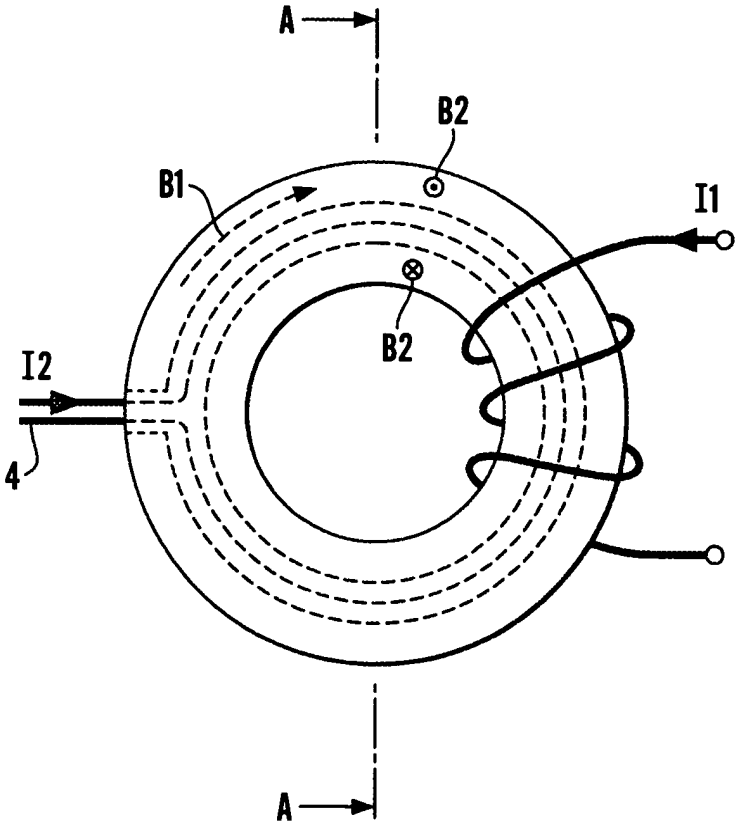
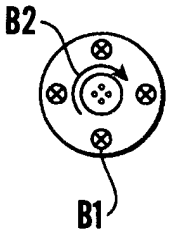


Fig.2a

Fig.2b



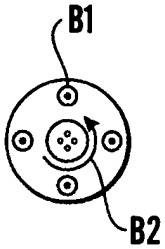


Fig.2c

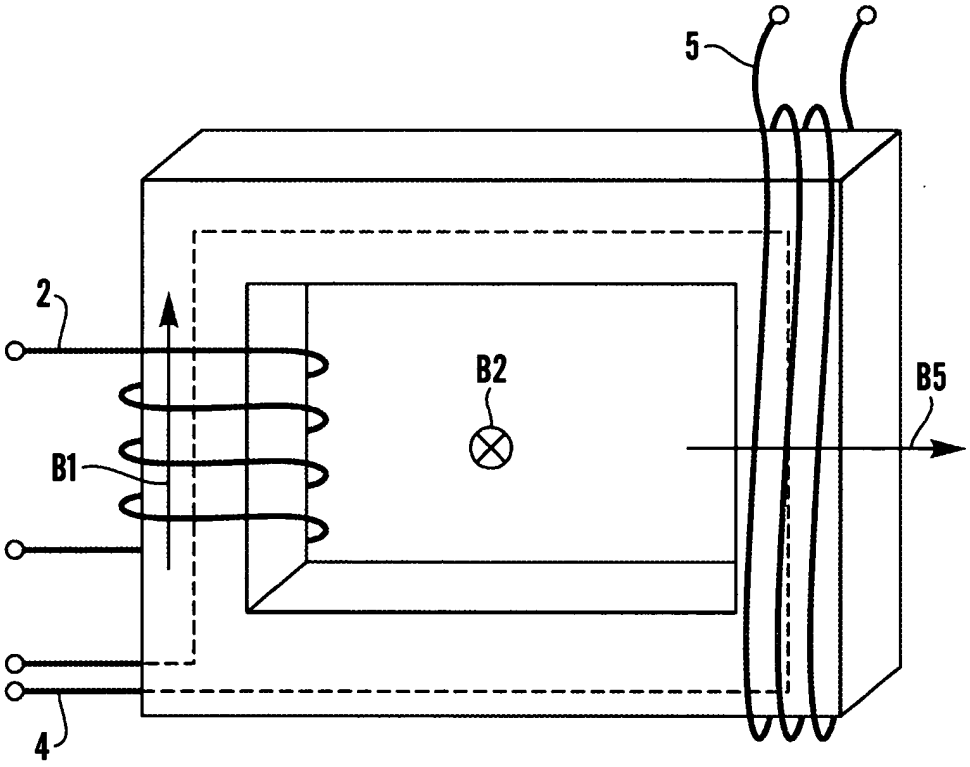


Fig.3

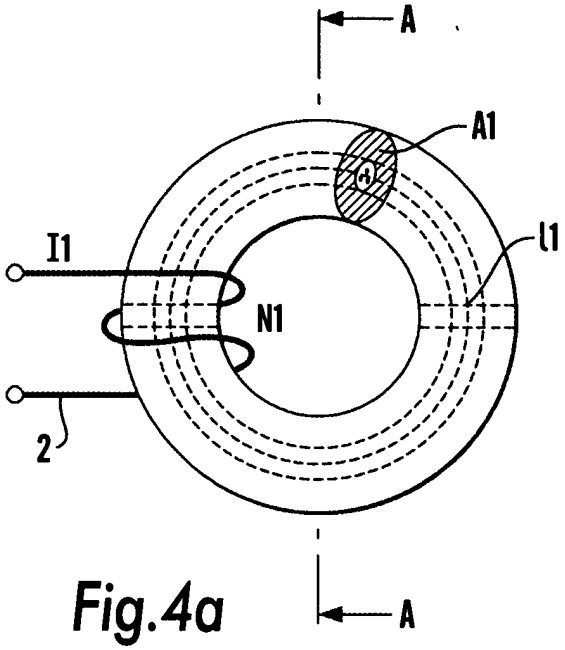


Fig.4a

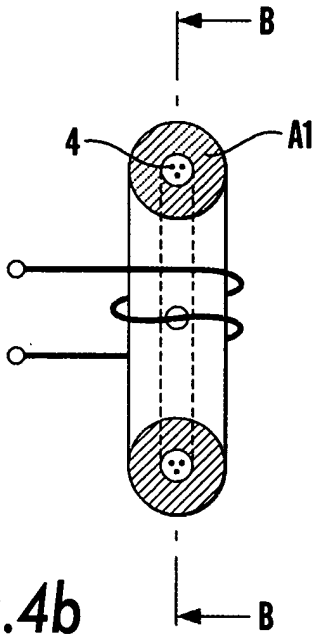


Fig.4b

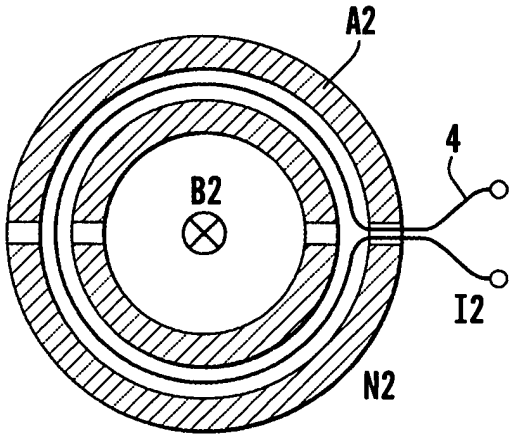


Fig.4c

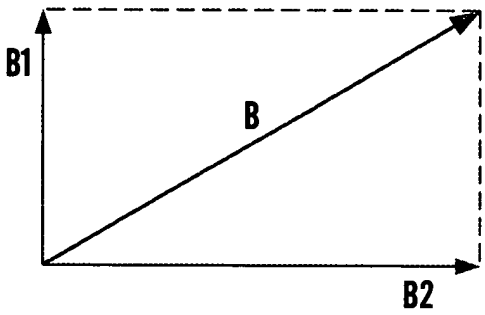


Fig.4d

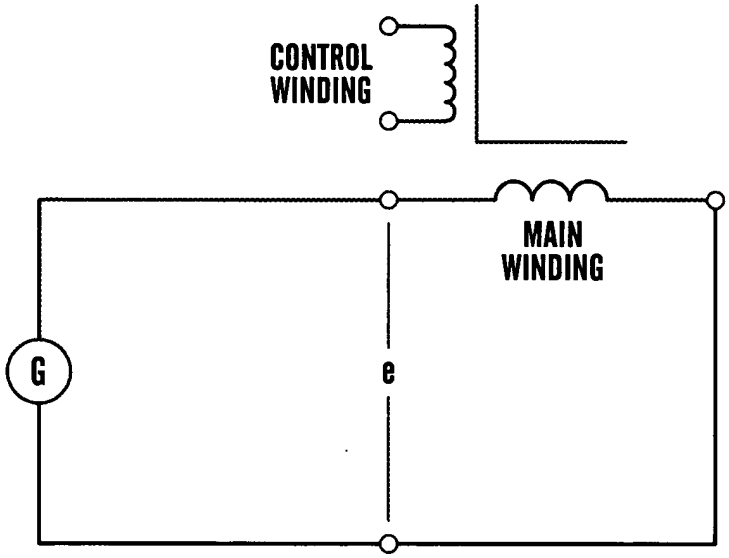


Fig.5a

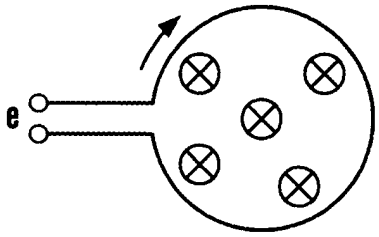


Fig.5b

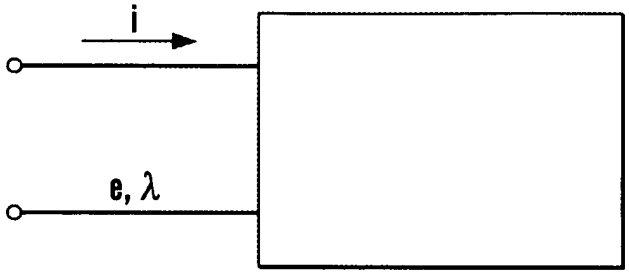


Fig.6

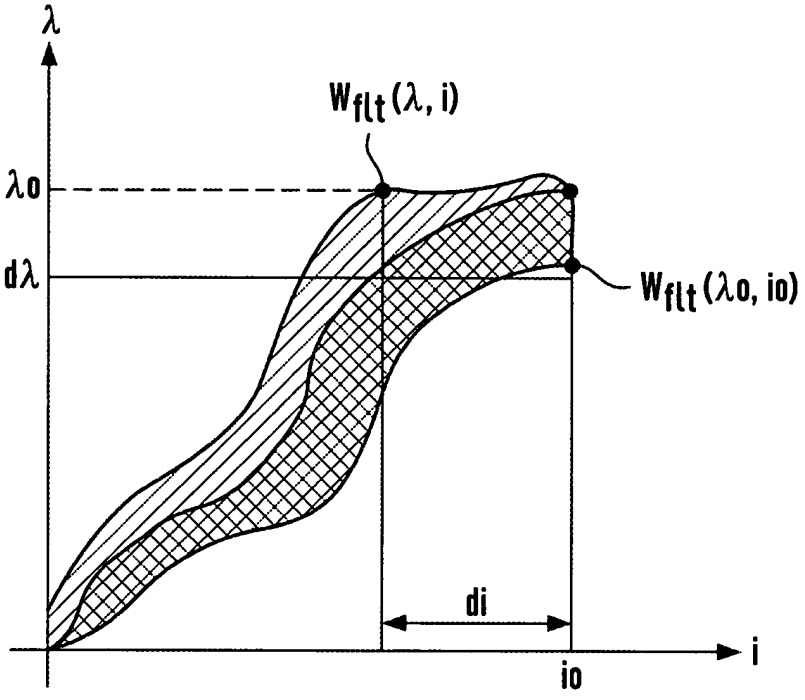


Fig.7

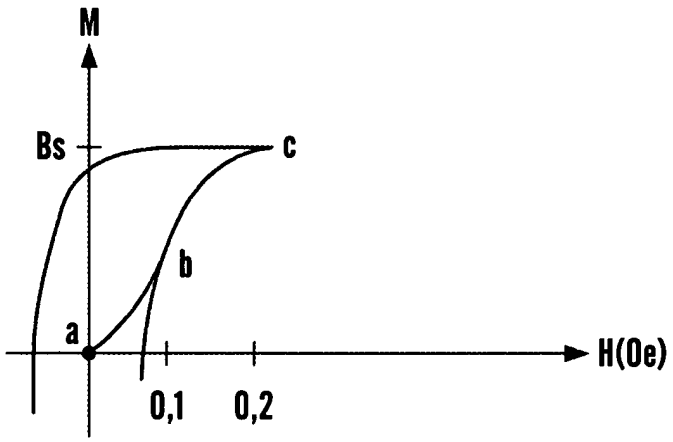


Fig.8a

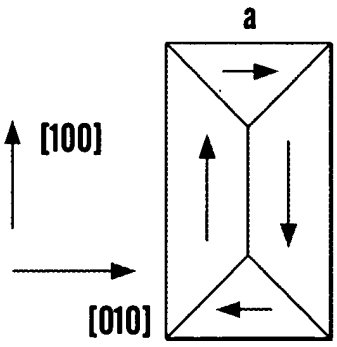


Fig.8b

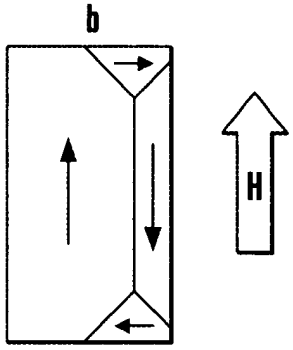


Fig.8b

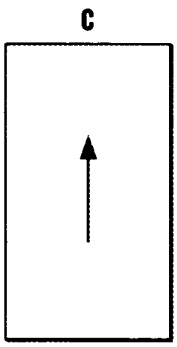


Fig.8d

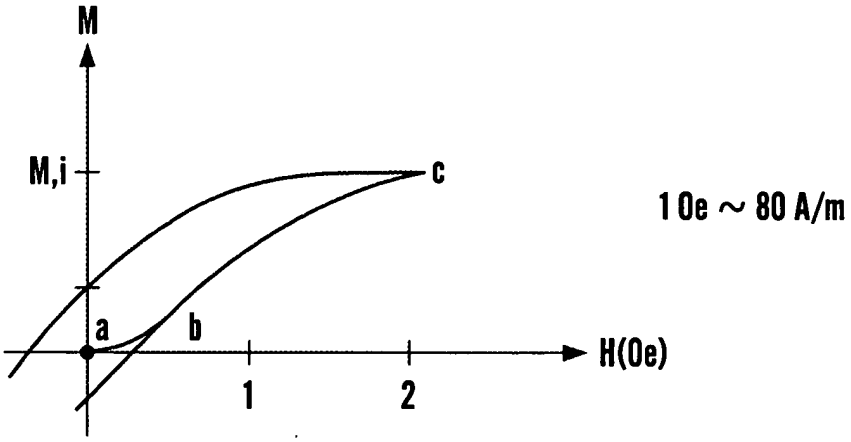


Fig.9a

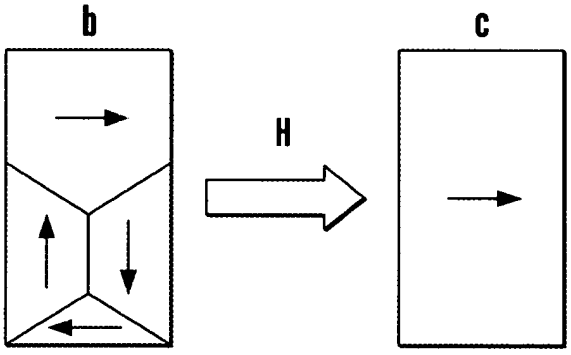


Fig.9b

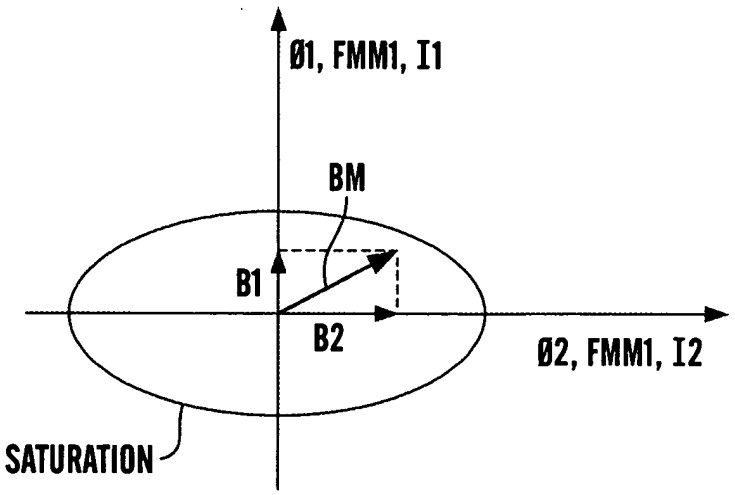


Fig. 10a

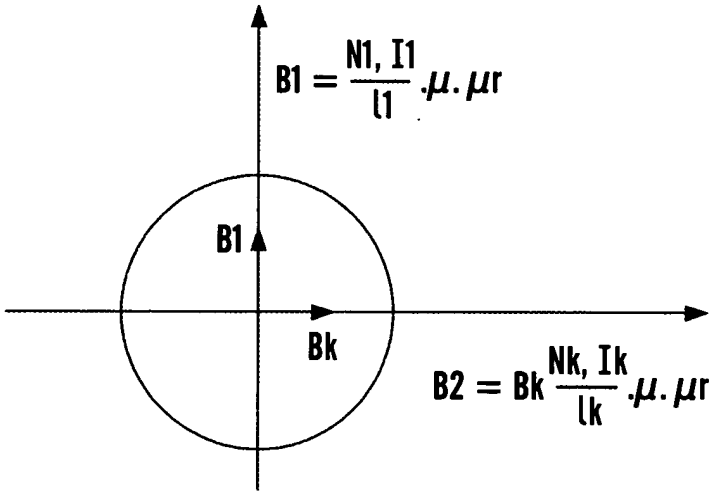


Fig. 10b

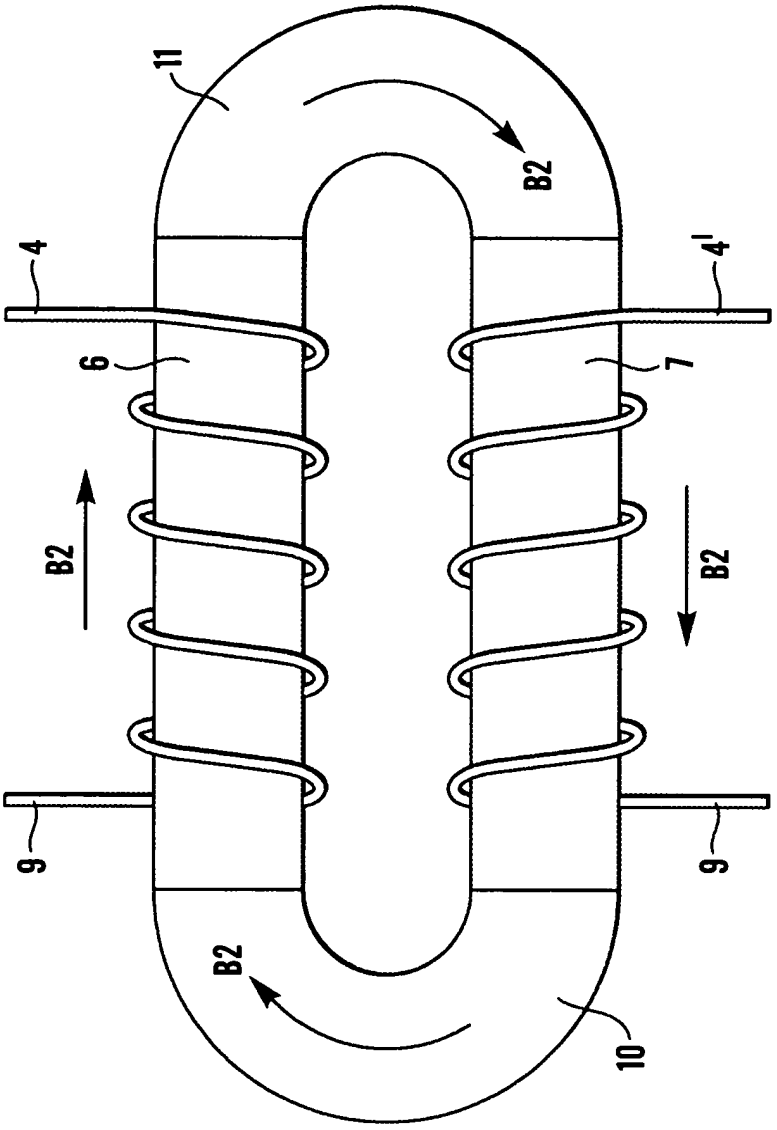


Fig. 11e

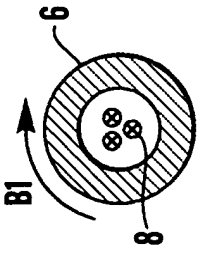


Fig. 11a

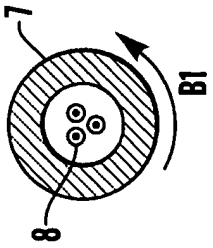


Fig. 11b

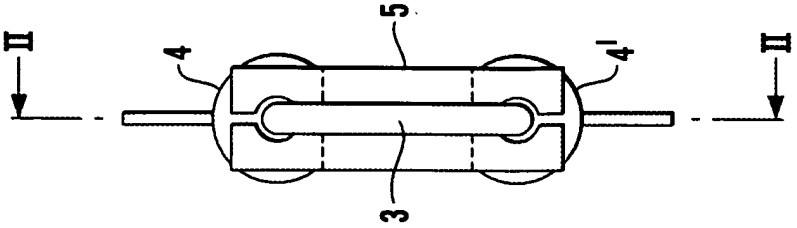


Fig. 12b

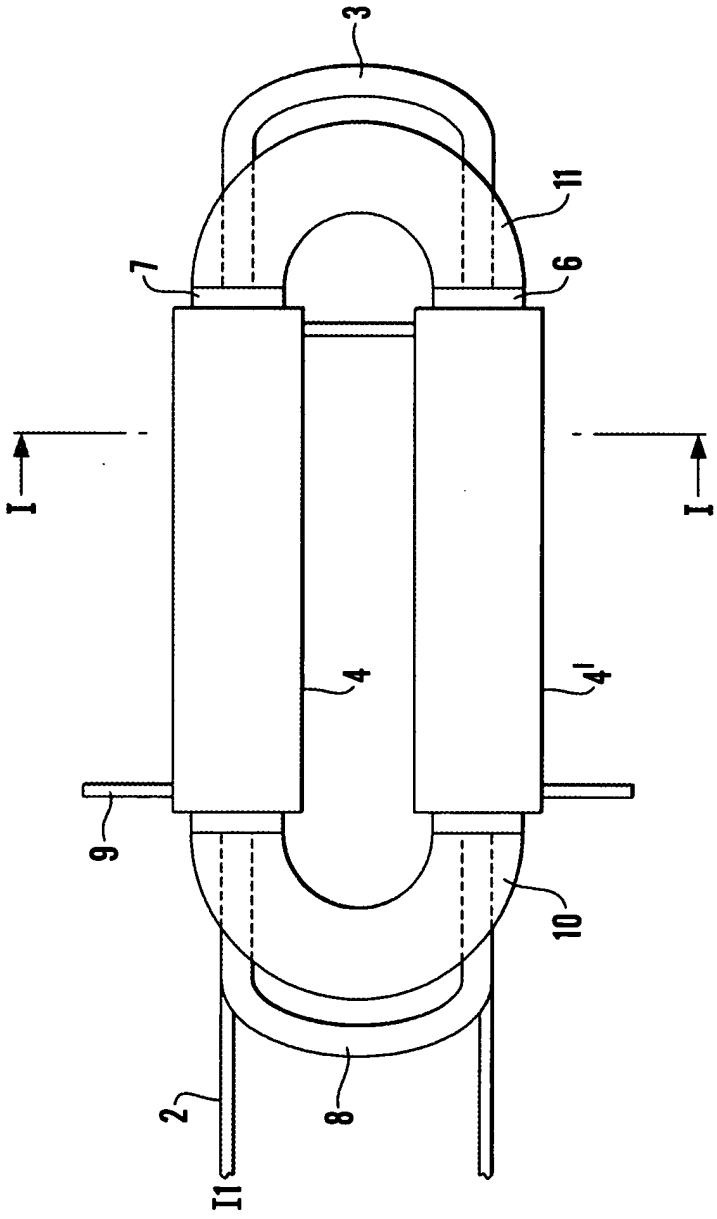


Fig. 12a

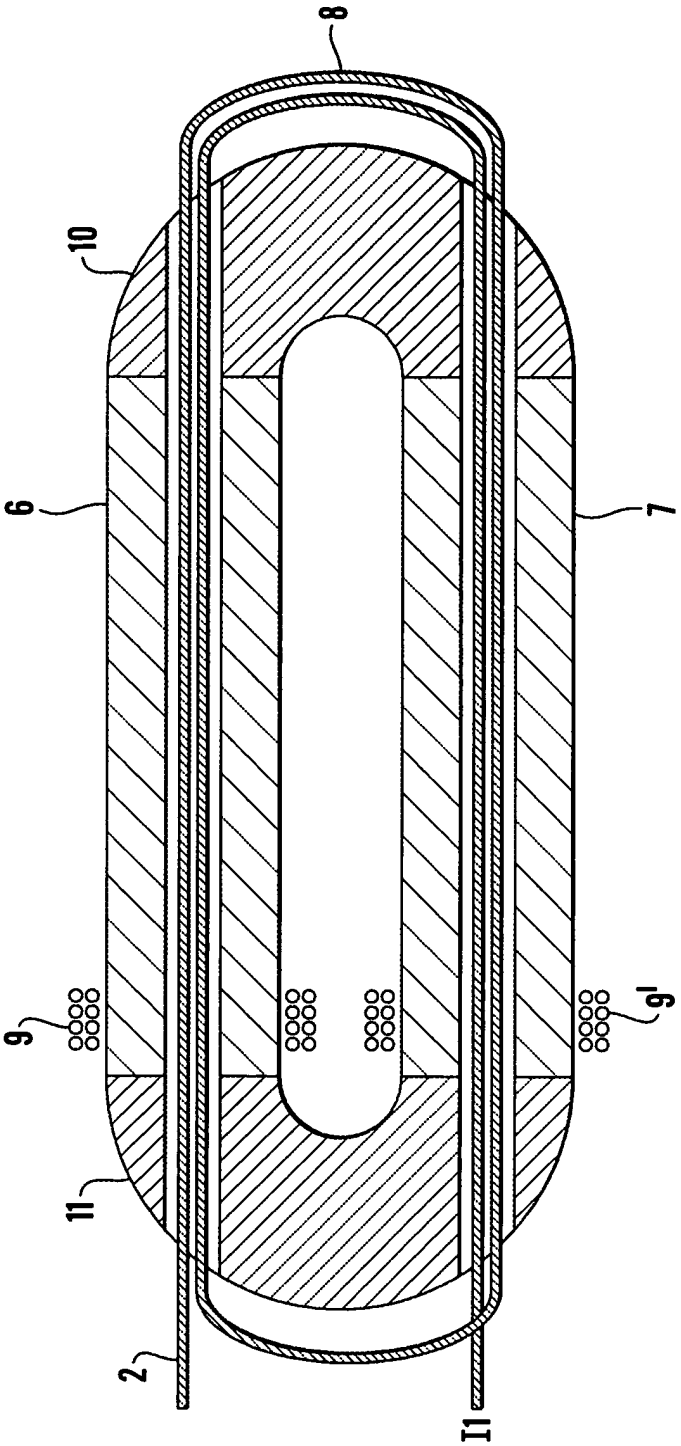


Fig. 13

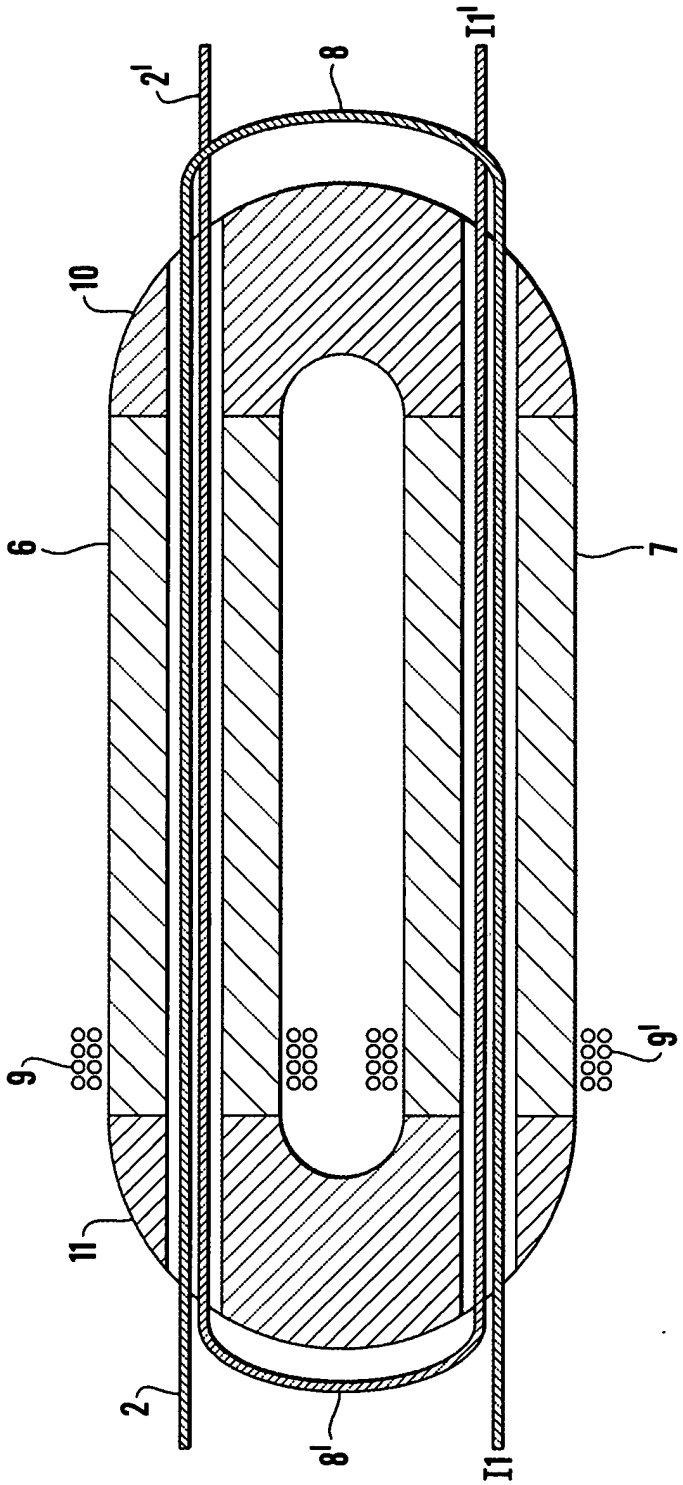


Fig. 14

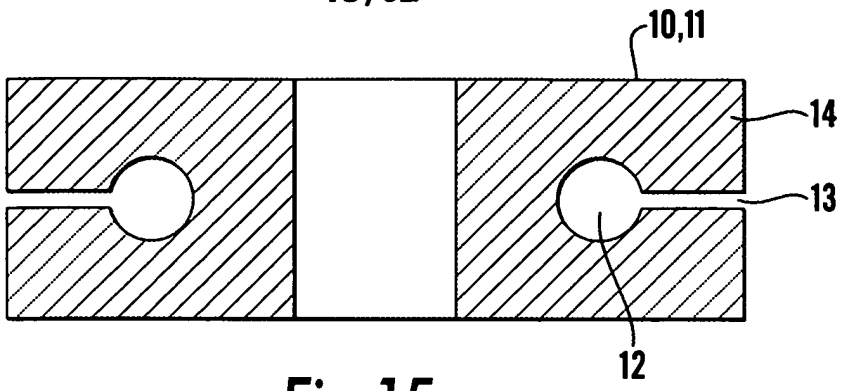


Fig. 15a

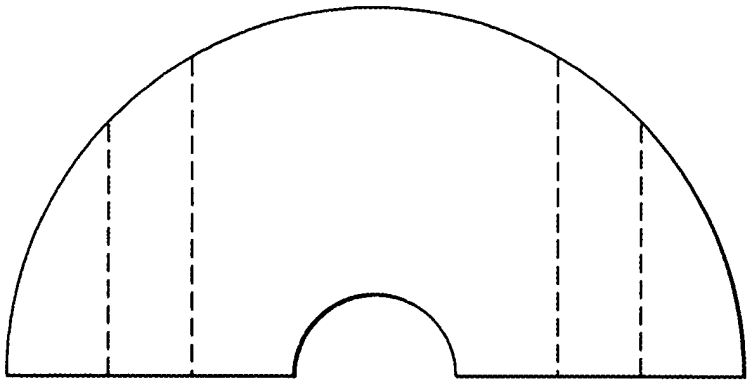


Fig. 15b

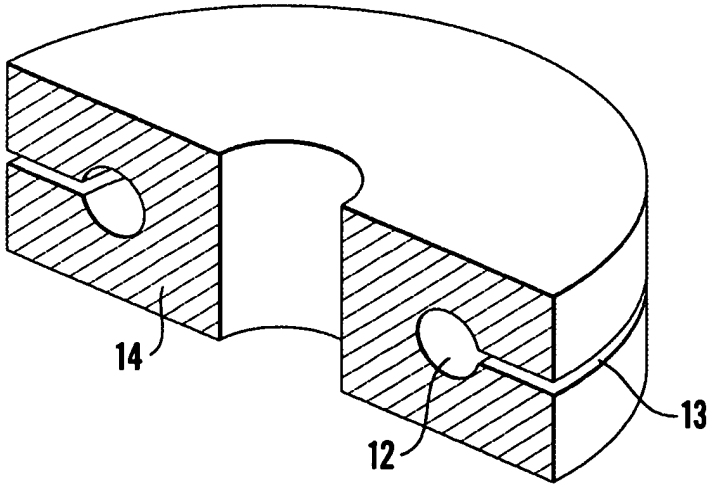


Fig. 15c

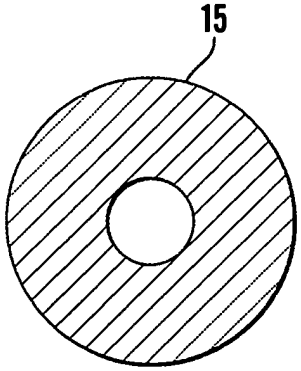


Fig. 16

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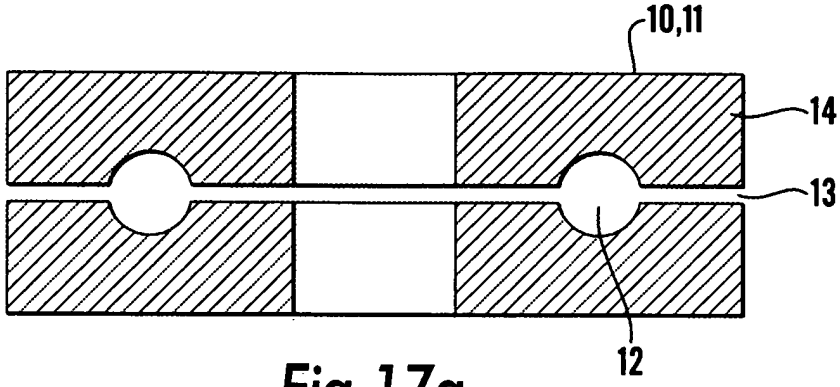

Fig. 17a

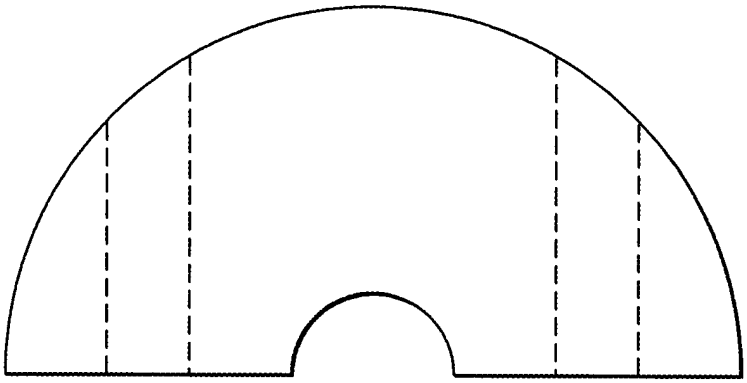

Fig. 17b

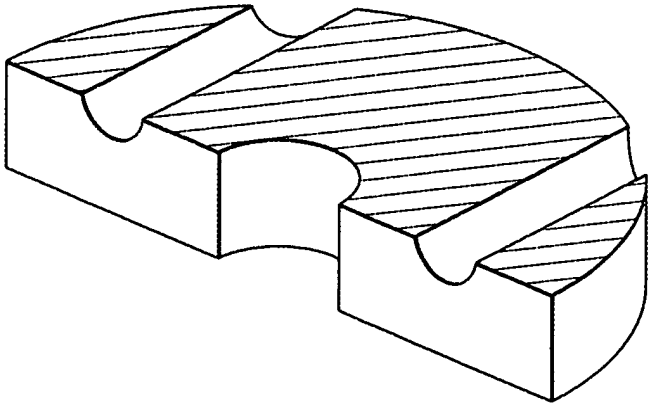

Fig. 17c

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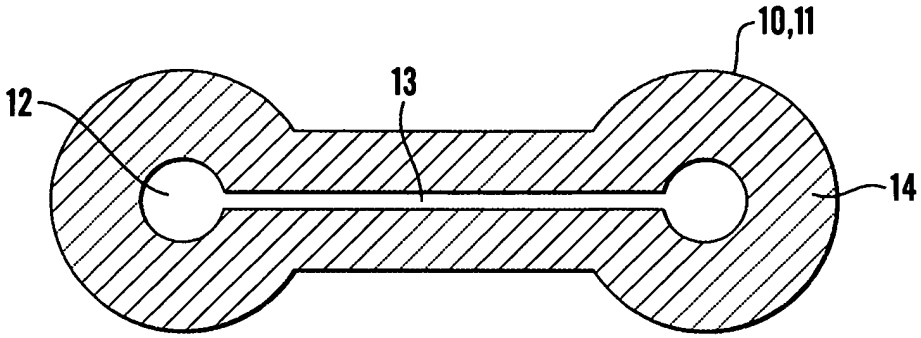


Fig. 18a

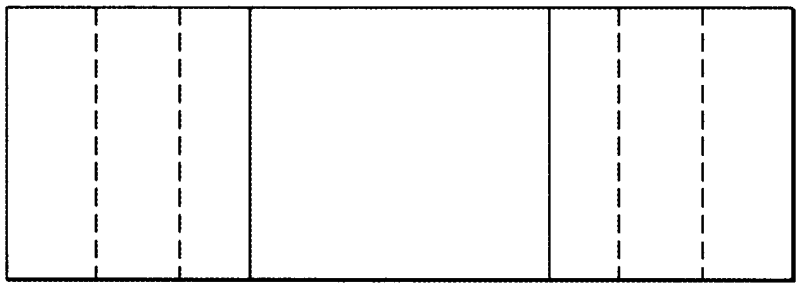


Fig. 18b

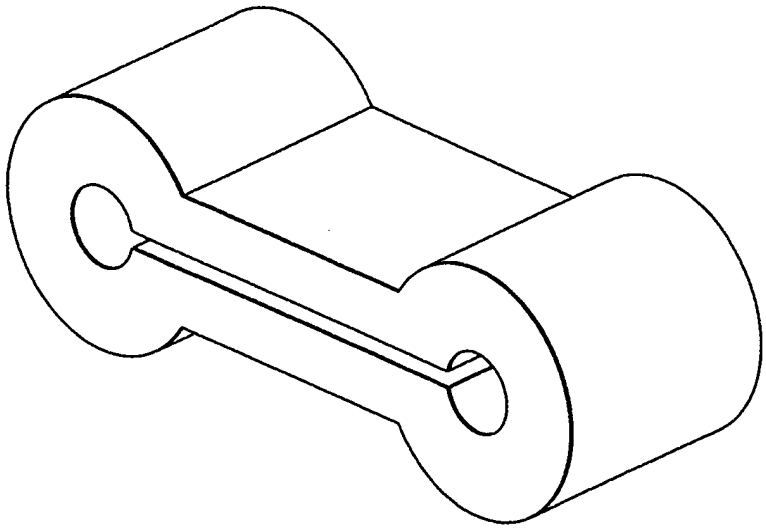


Fig. 18c

Fig. 19

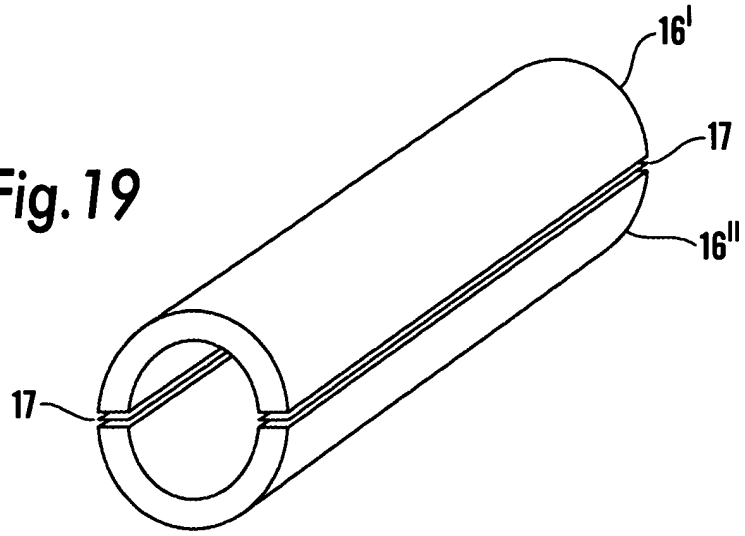


Fig. 20

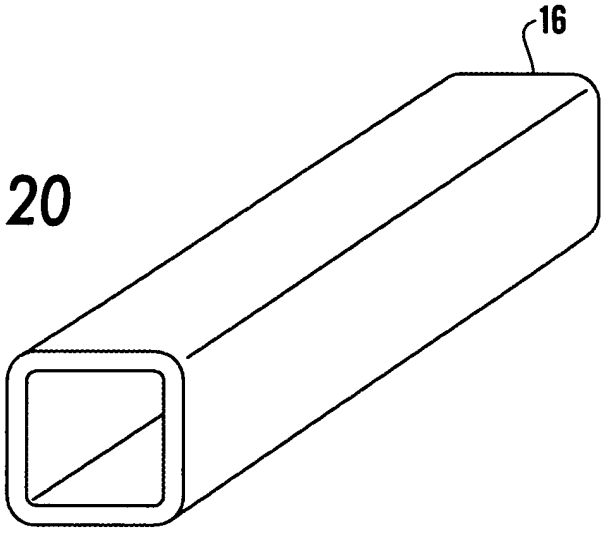


Fig. 21

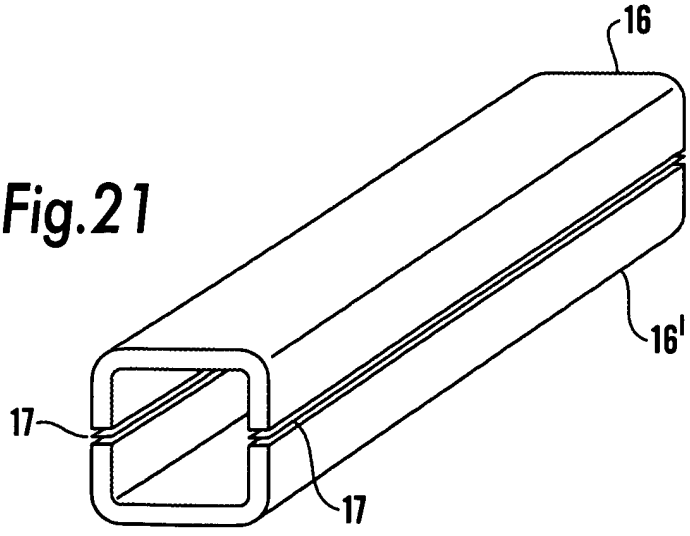


Fig.22

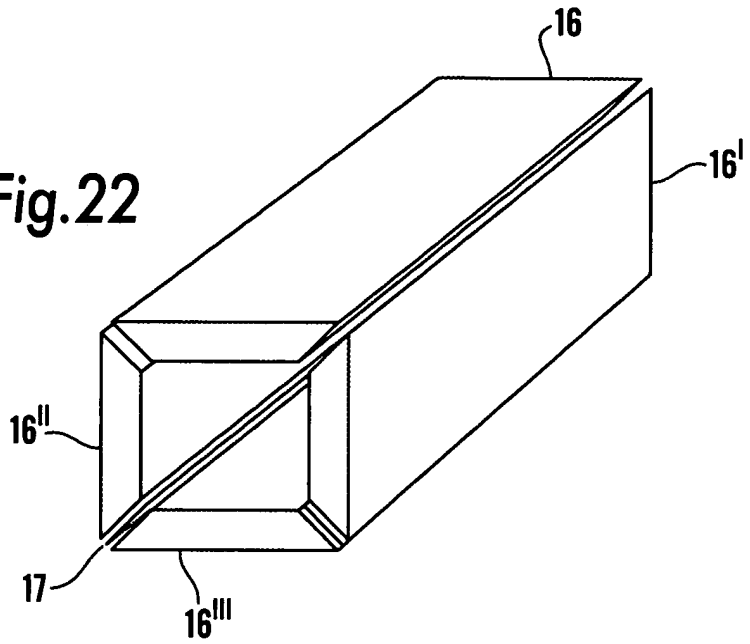


Fig.23

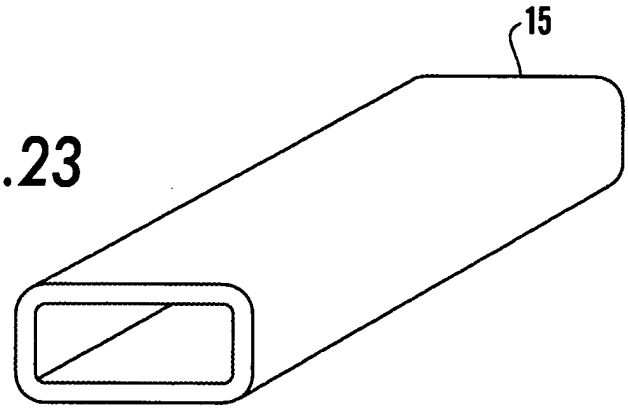


Fig.24

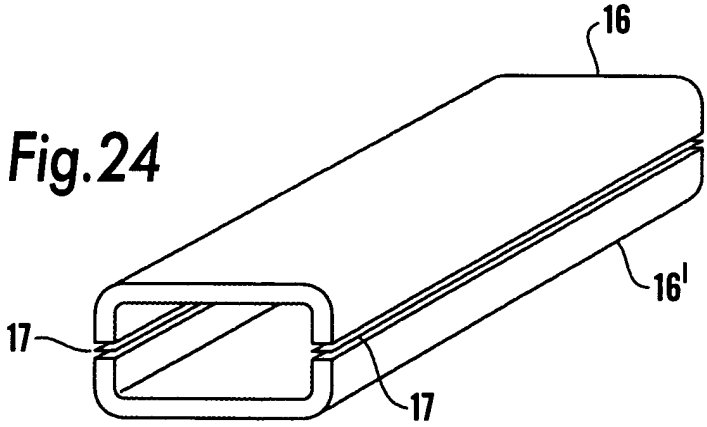


Fig.25

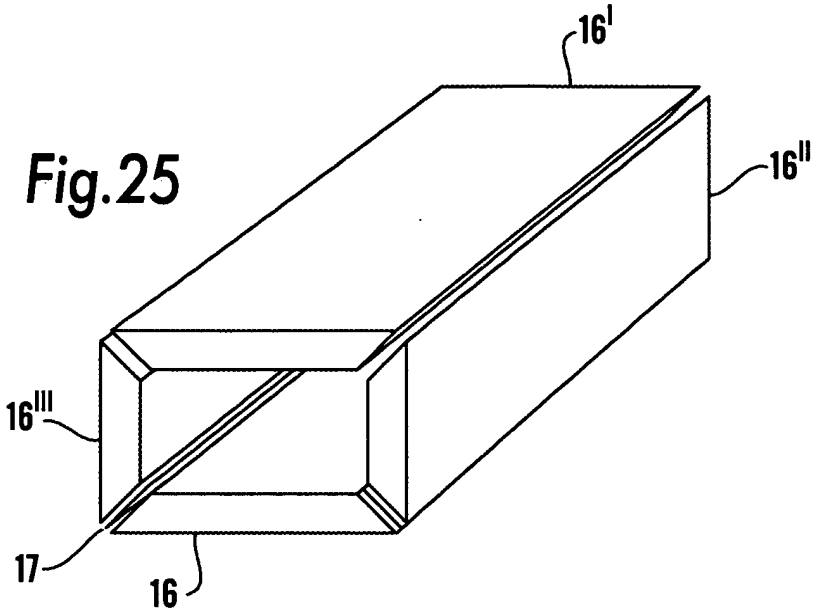


Fig.26

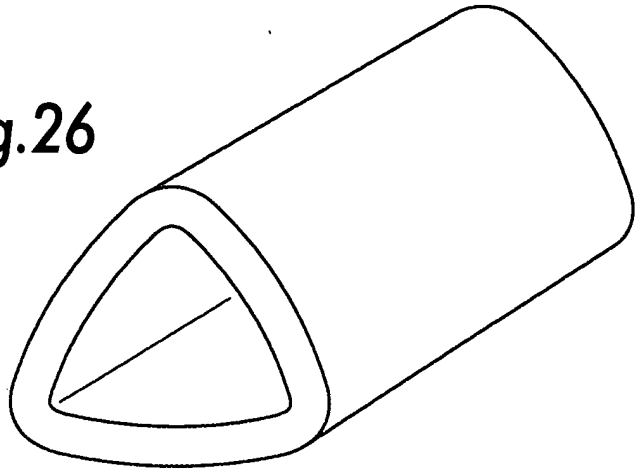


Fig.27

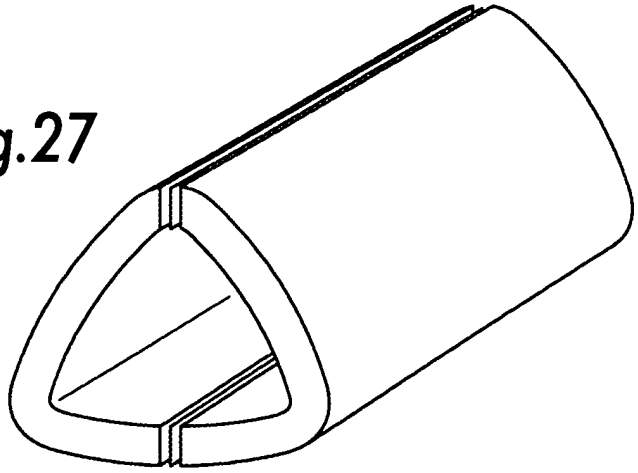


Fig.28

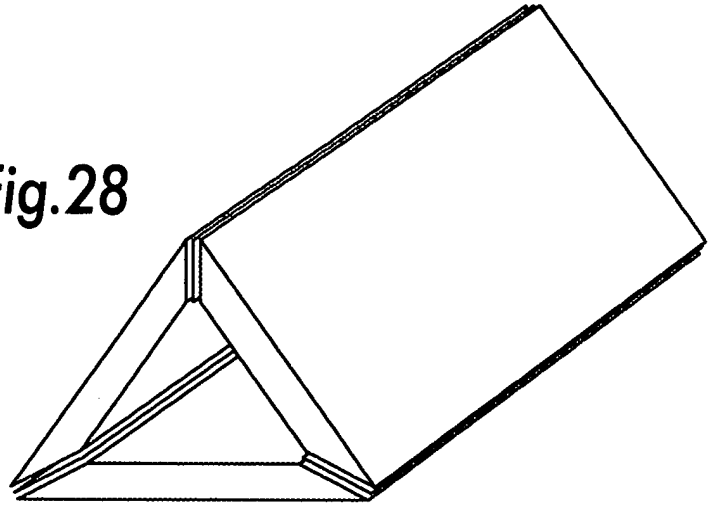


Fig.29

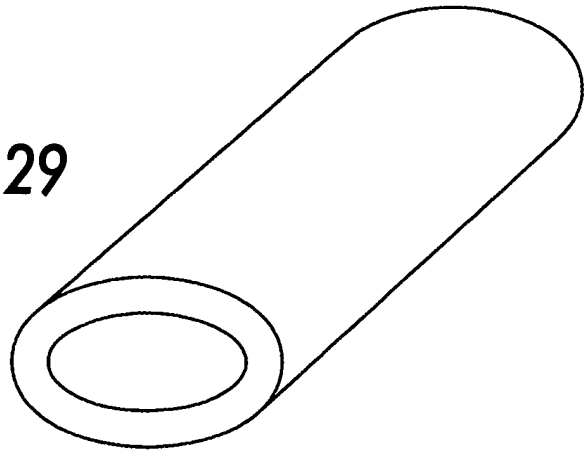


Fig.30

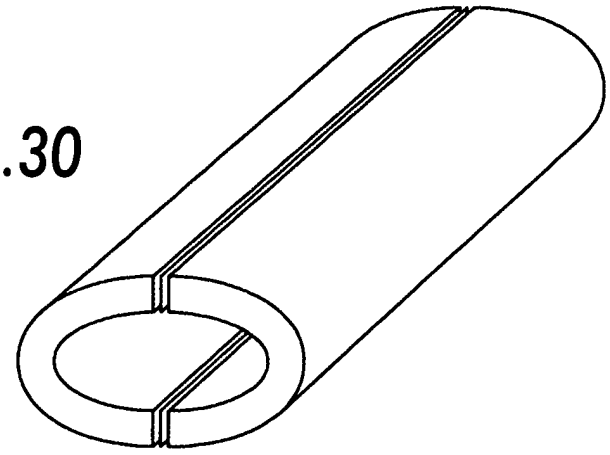


Fig.31

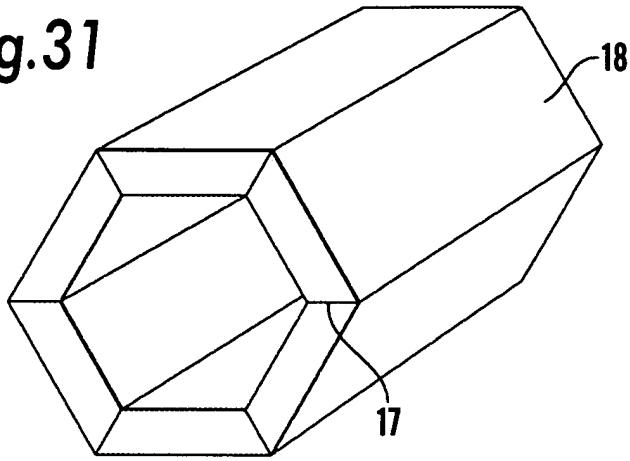
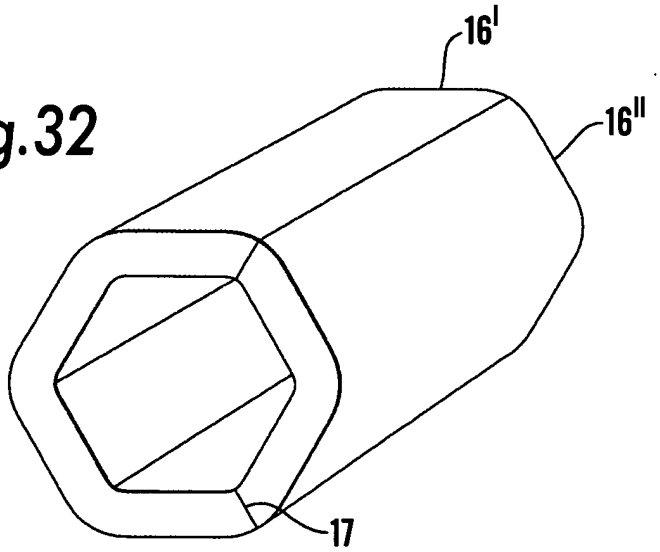


Fig.32



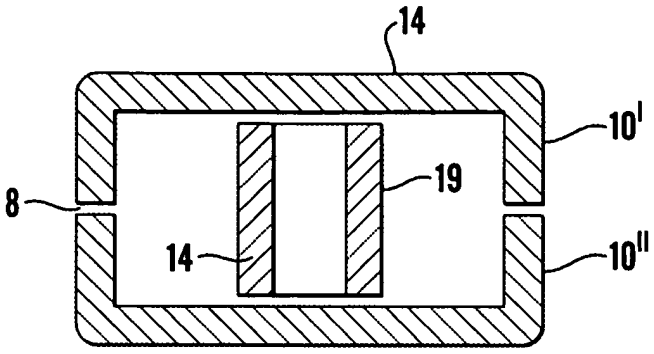


Fig.33a

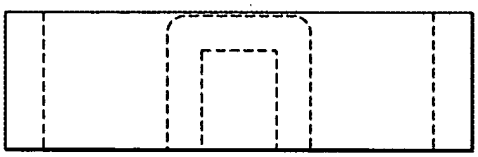


Fig.33b

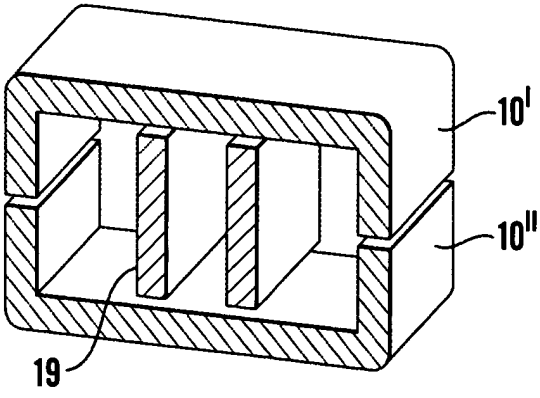


Fig.33c

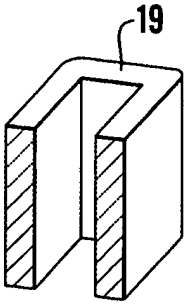


Fig.33d

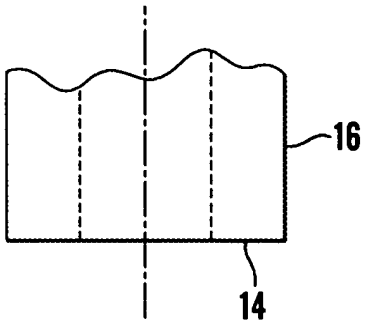


Fig.34

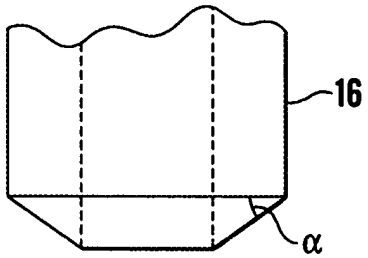


Fig.35

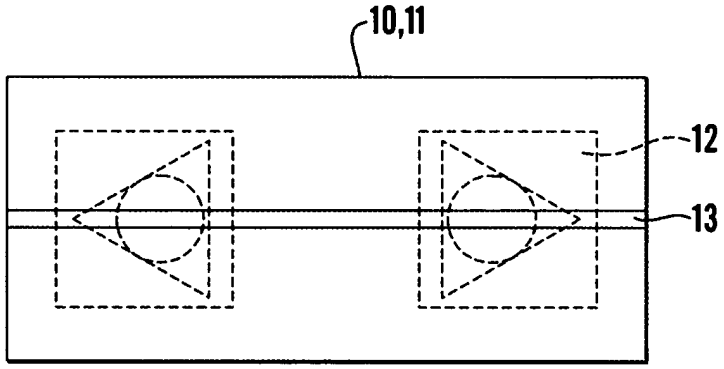


Fig.36

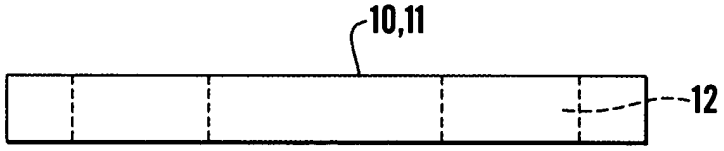


Fig.37

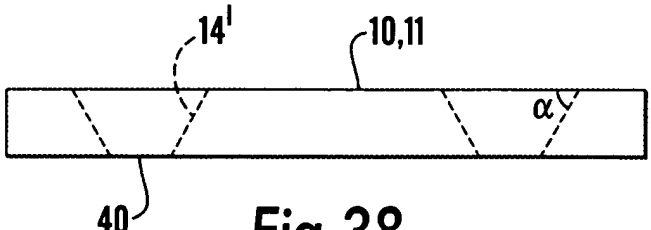


Fig.38

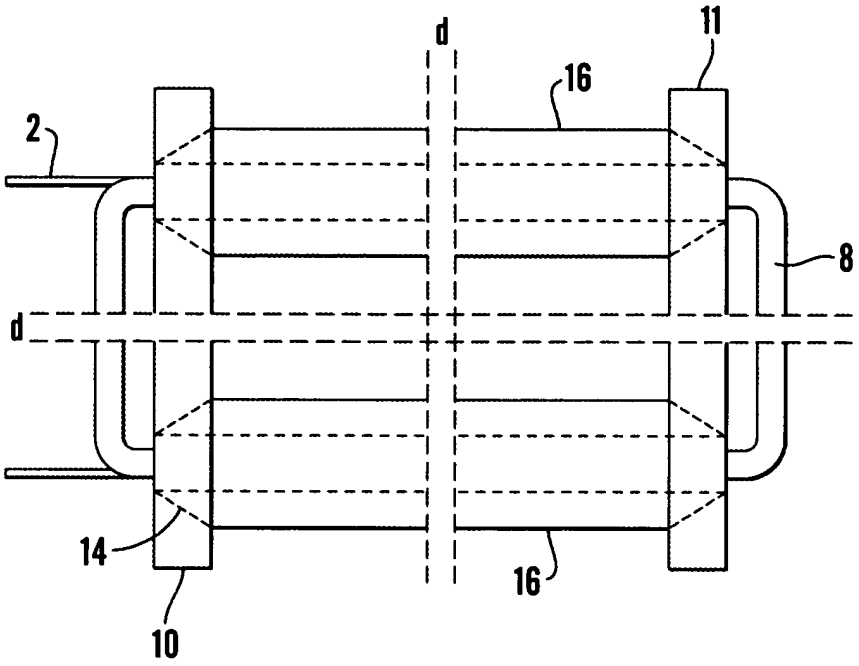


Fig.39a

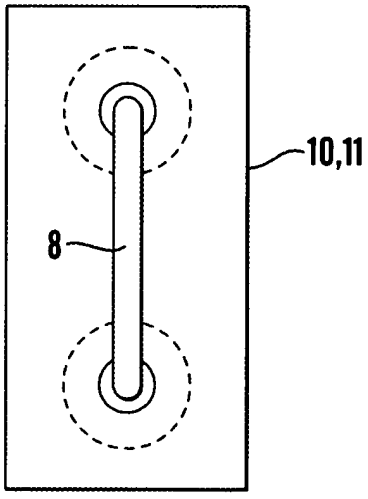


Fig.39b

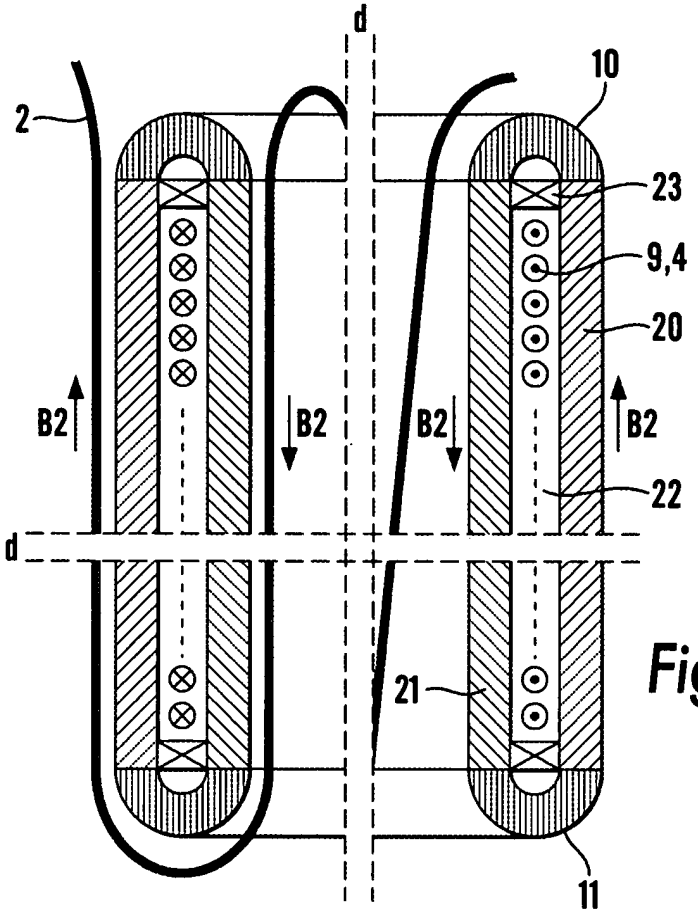


Fig.40a

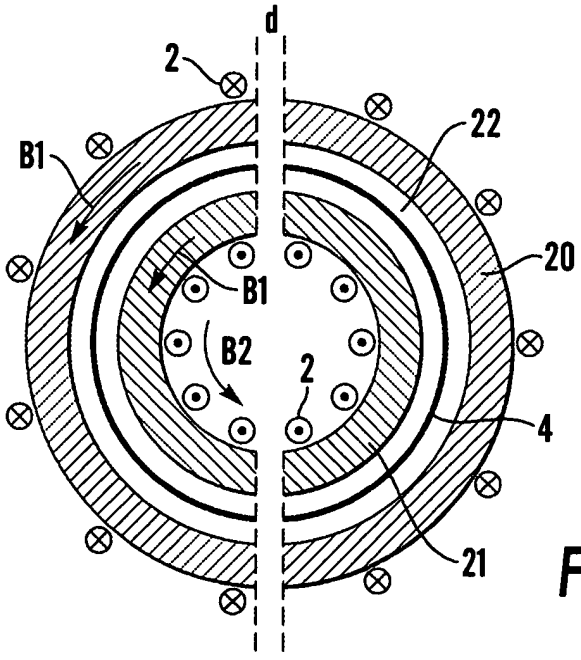


Fig.40b

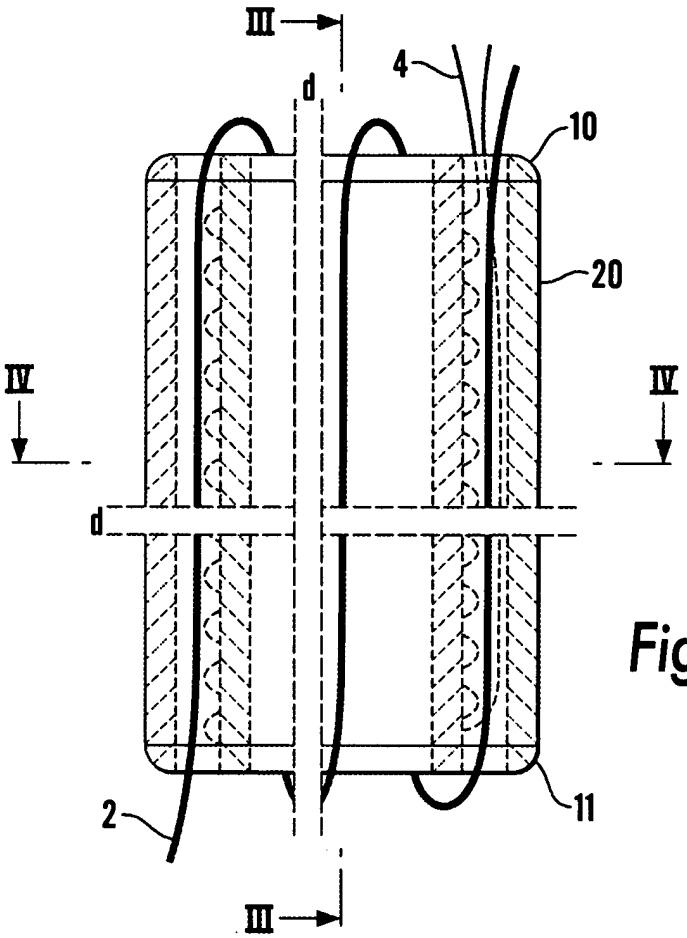


Fig.41a

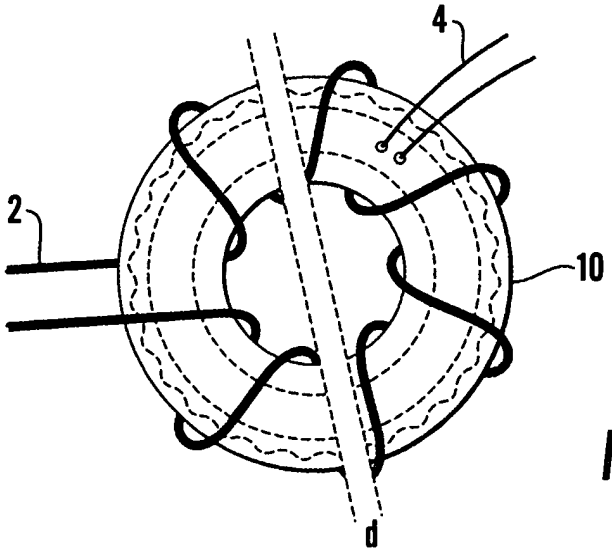


Fig.41b

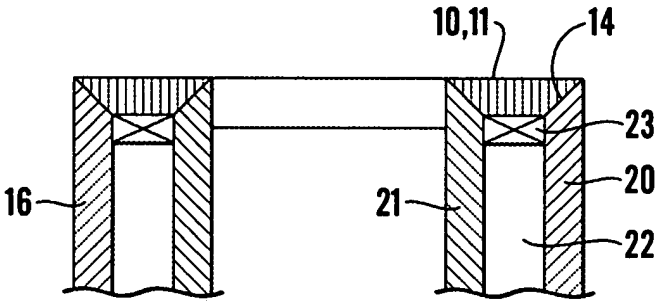


Fig.42a

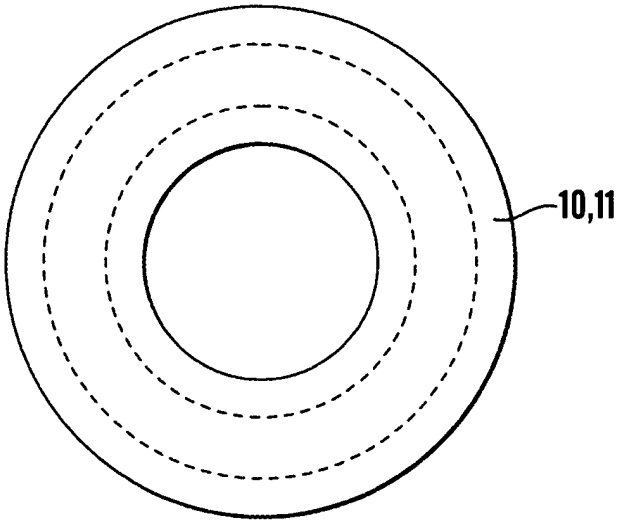


Fig.42b

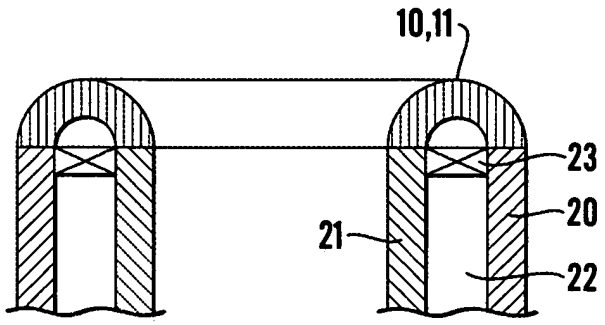


Fig.43

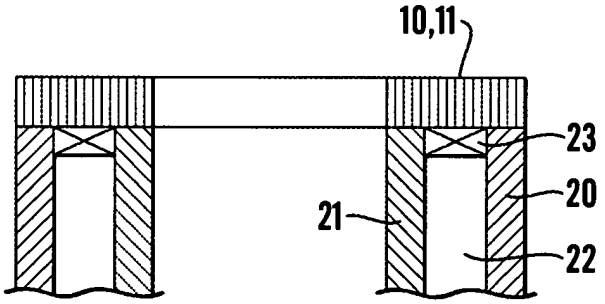


Fig.44

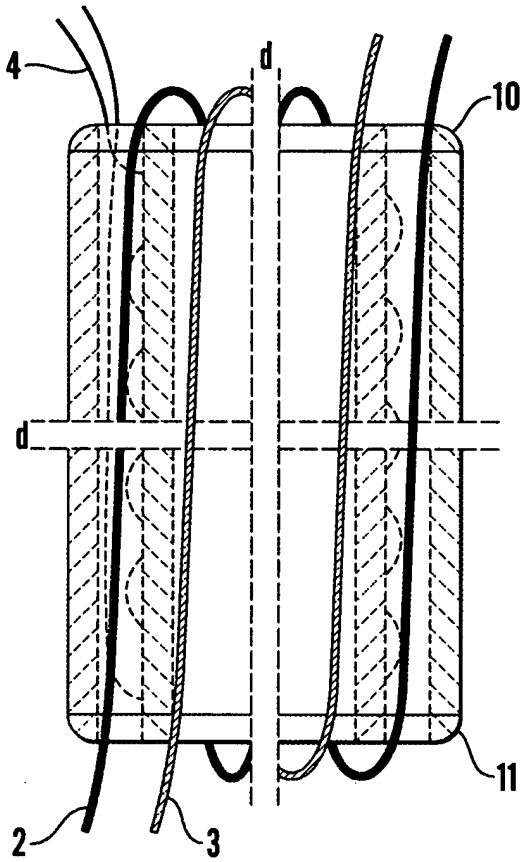


Fig.45a

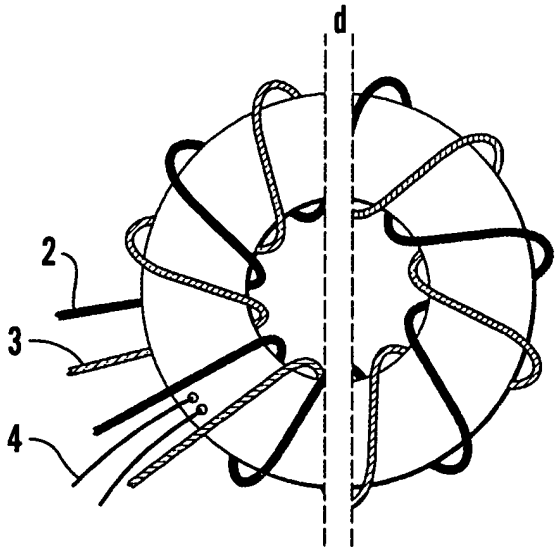


Fig.45b

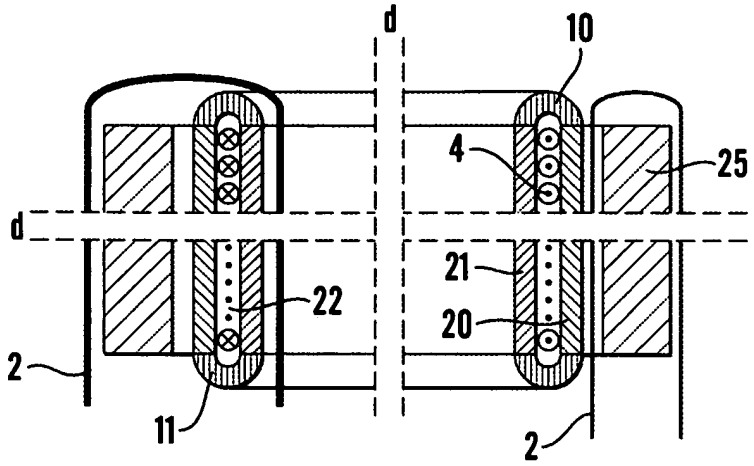


Fig.46a

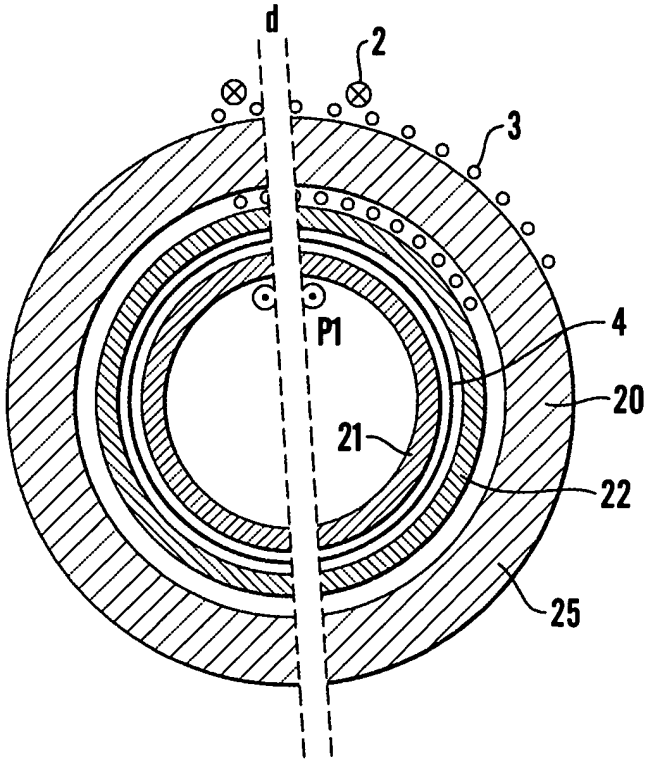


Fig.46b

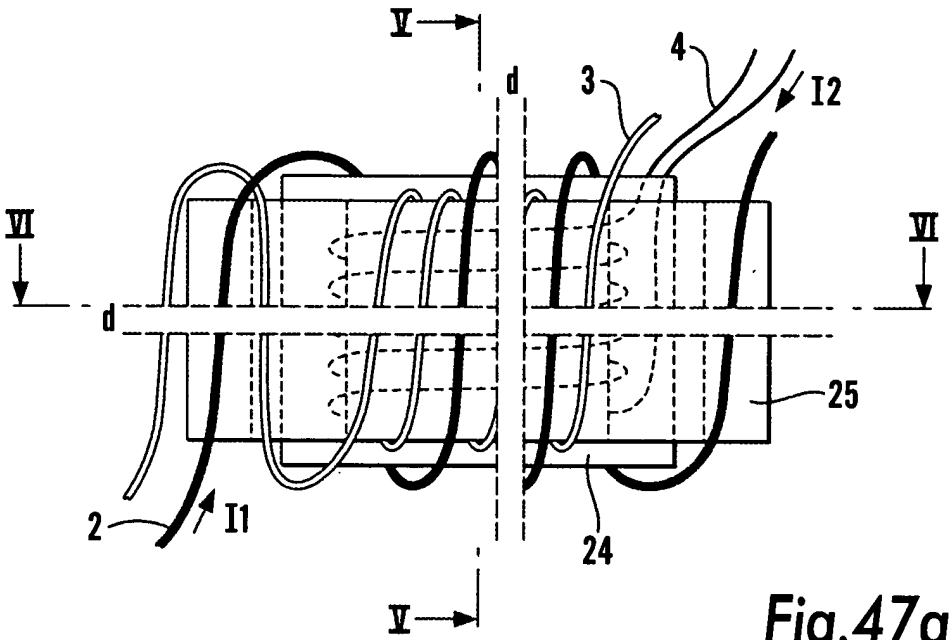


Fig.47a

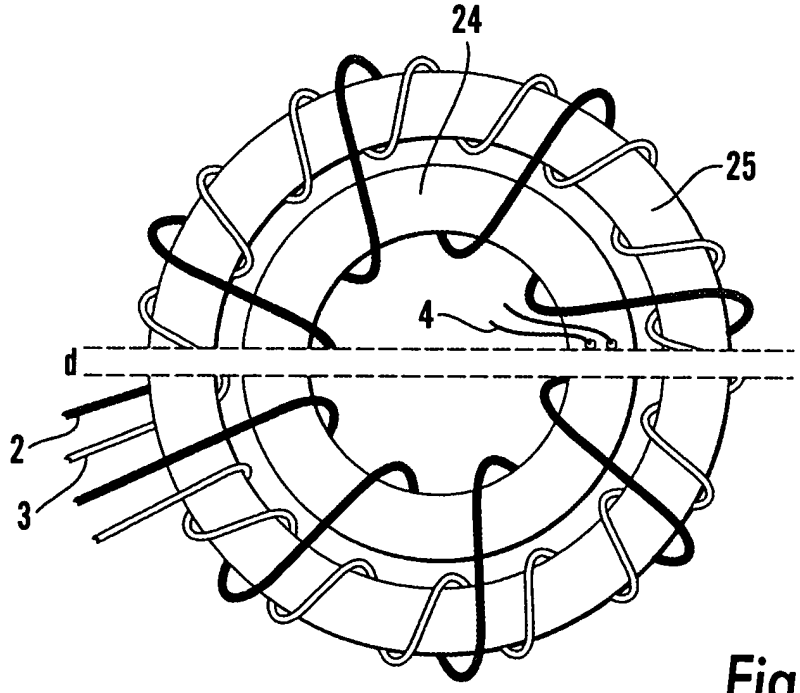


Fig.47b

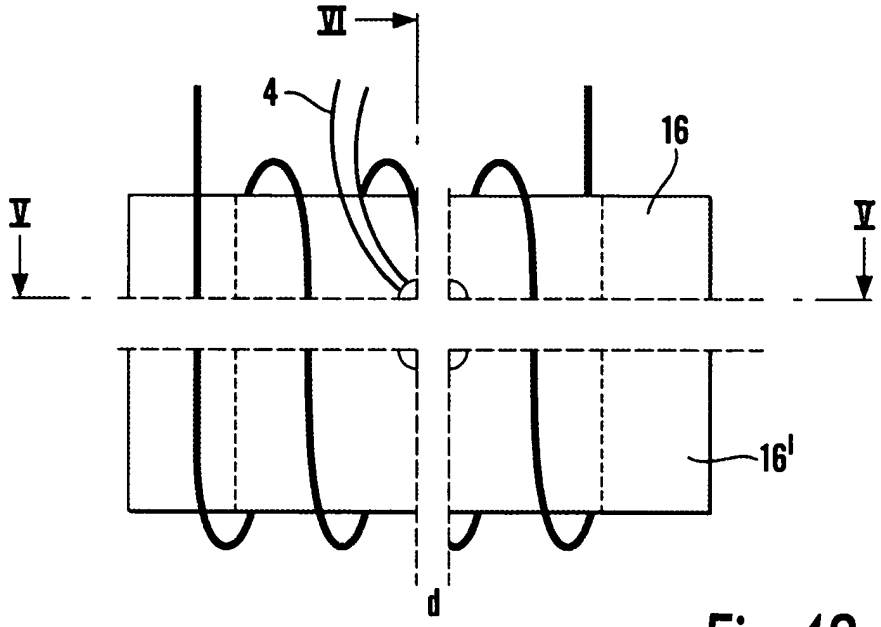


Fig.48

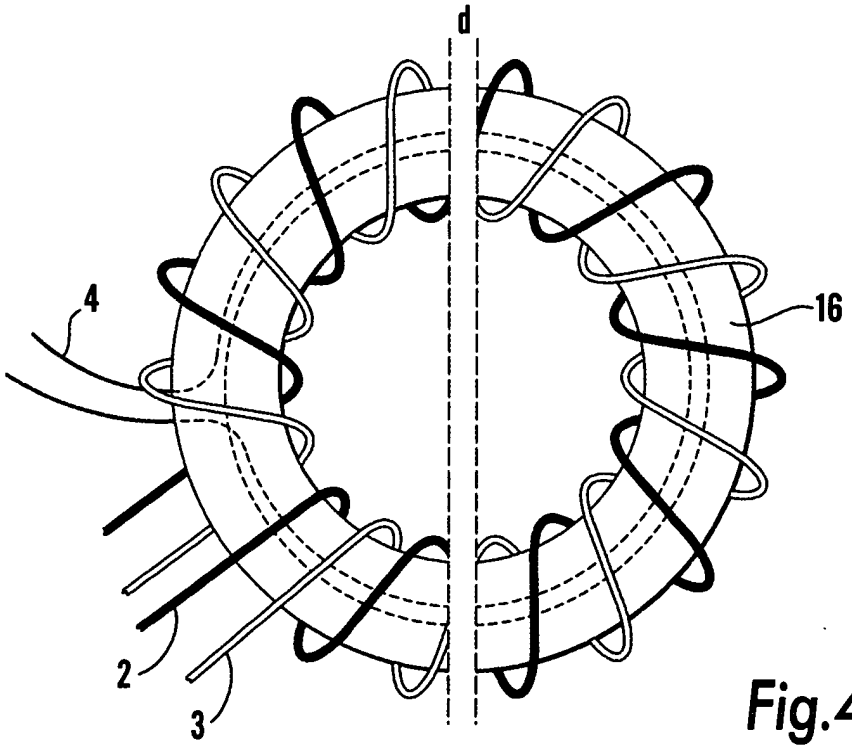


Fig.49

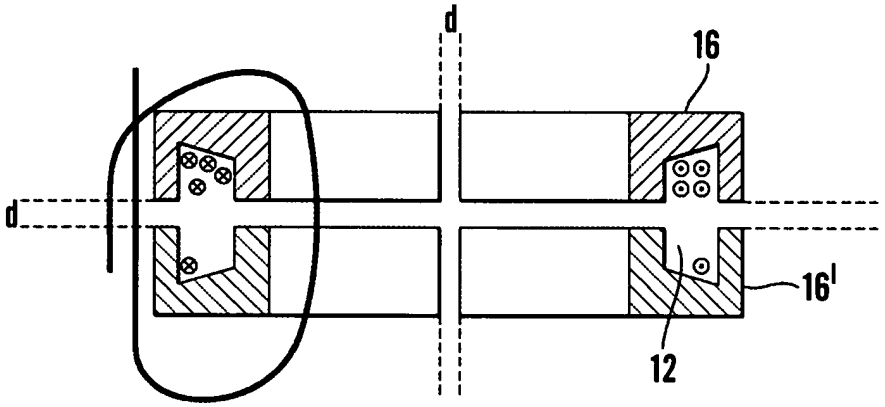


Fig.50

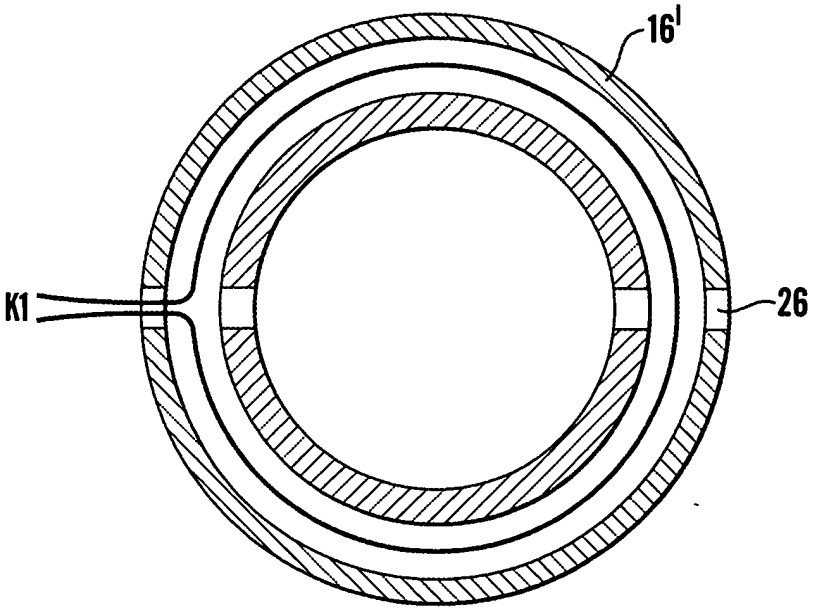


Fig.51a

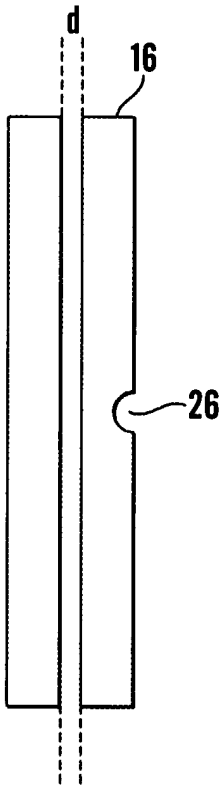


Fig.51b

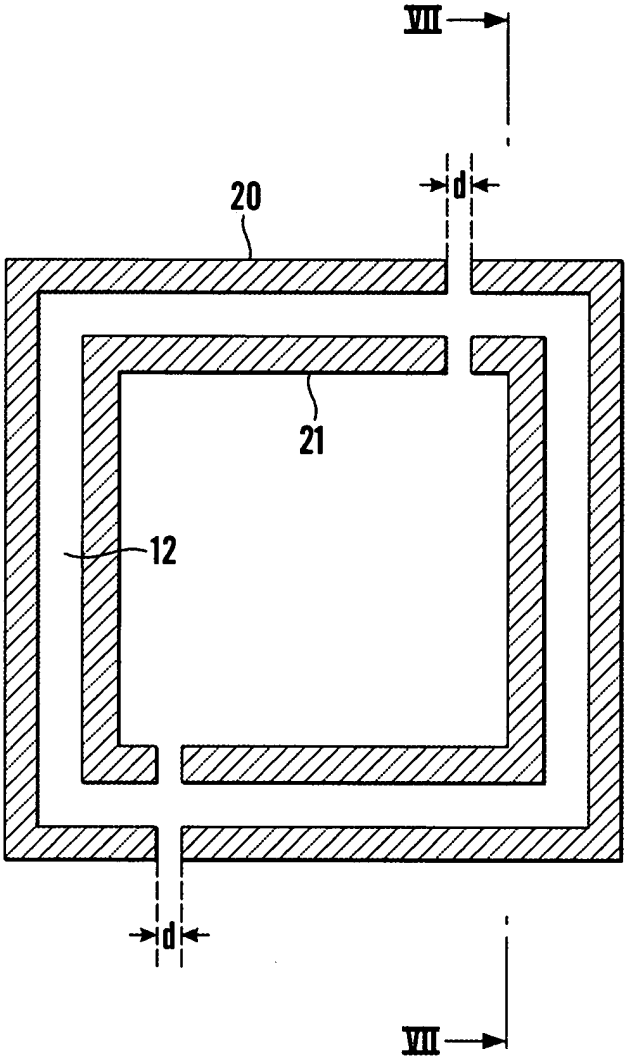


Fig.52a

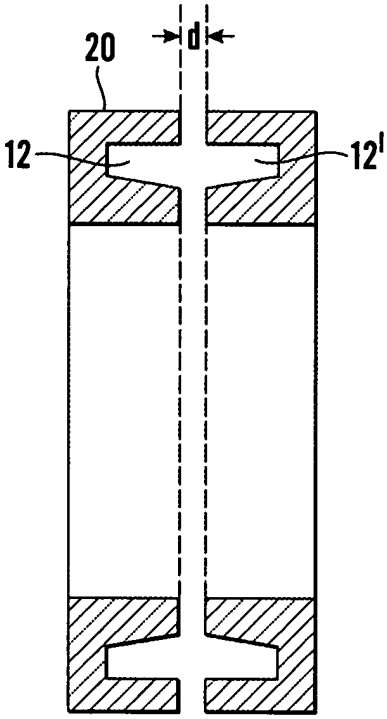


Fig.52b

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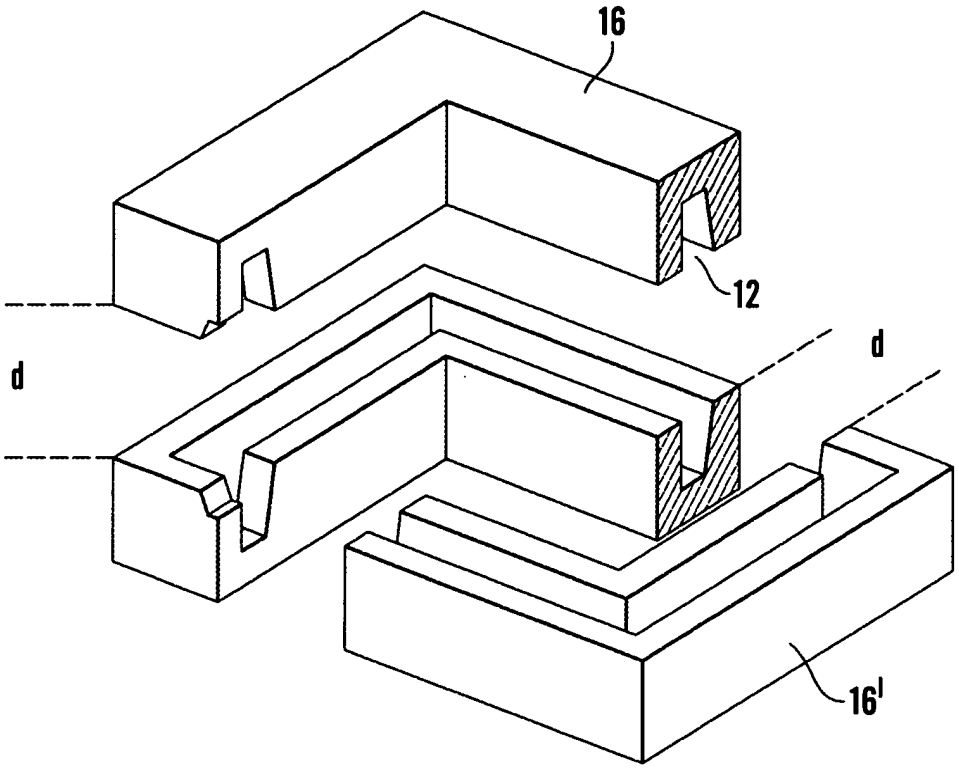

Fig.53a

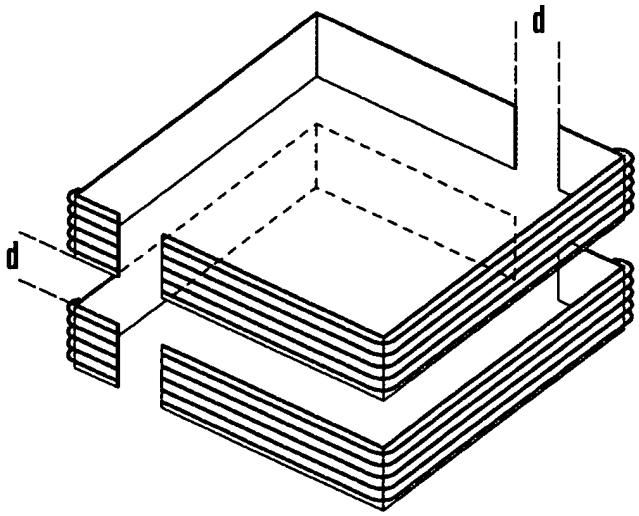

Fig.53b

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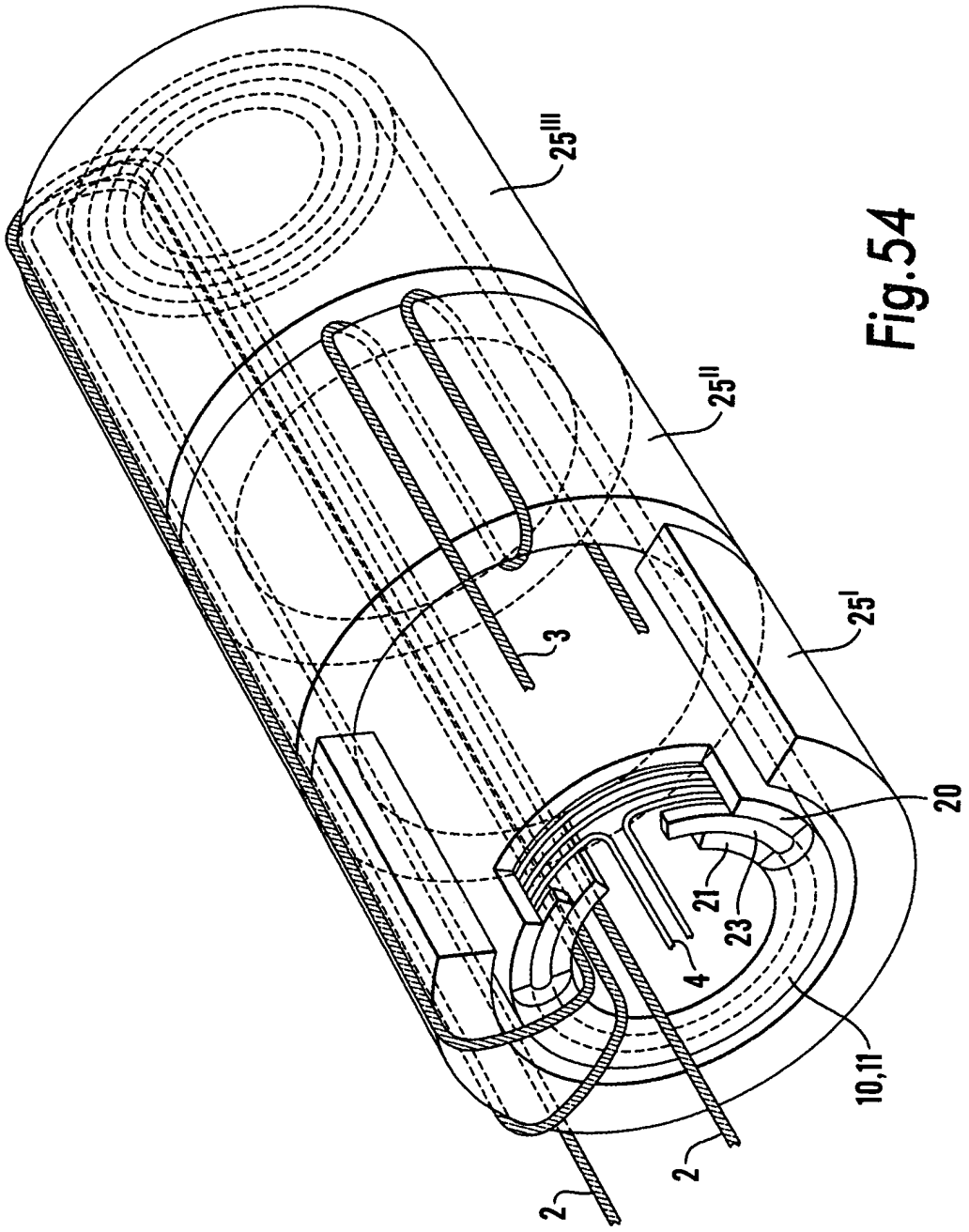


Fig.54

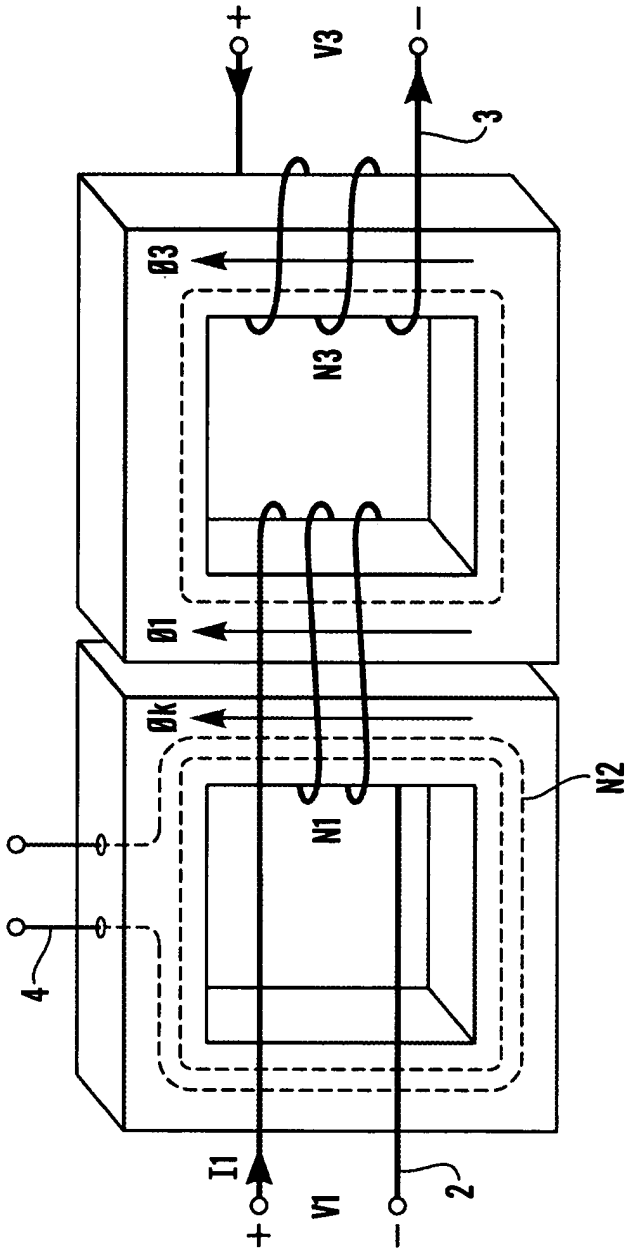


Fig.55

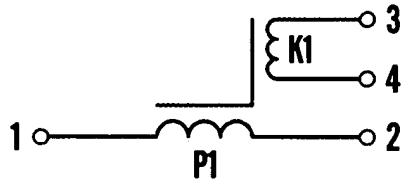


Fig.56

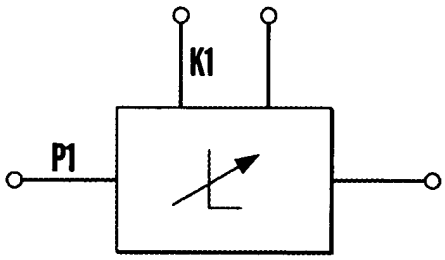
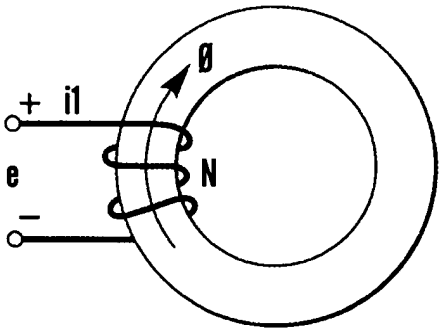


Fig.57



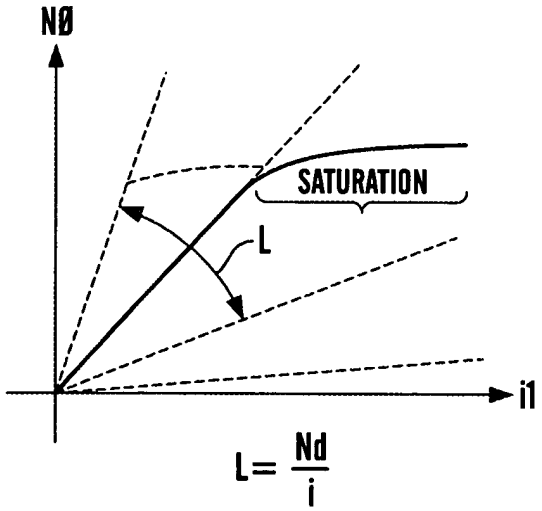


Fig.58

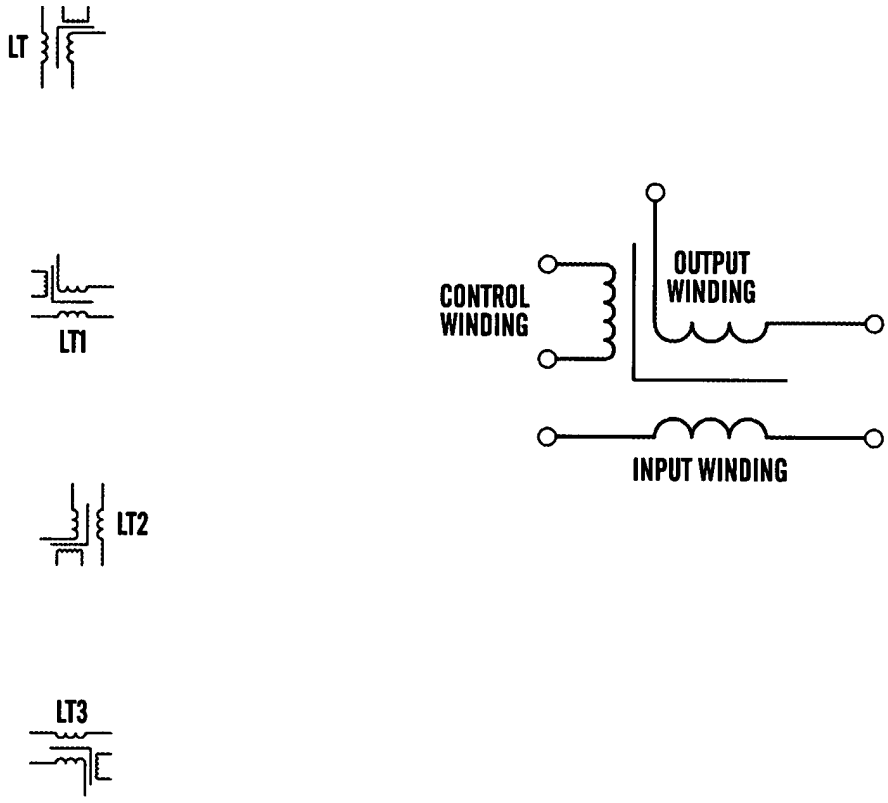

LT
LT1
LT2
LT3
CONTROL WINDING
OUTPUT WINDING
INPUT WINDING

Fig.59

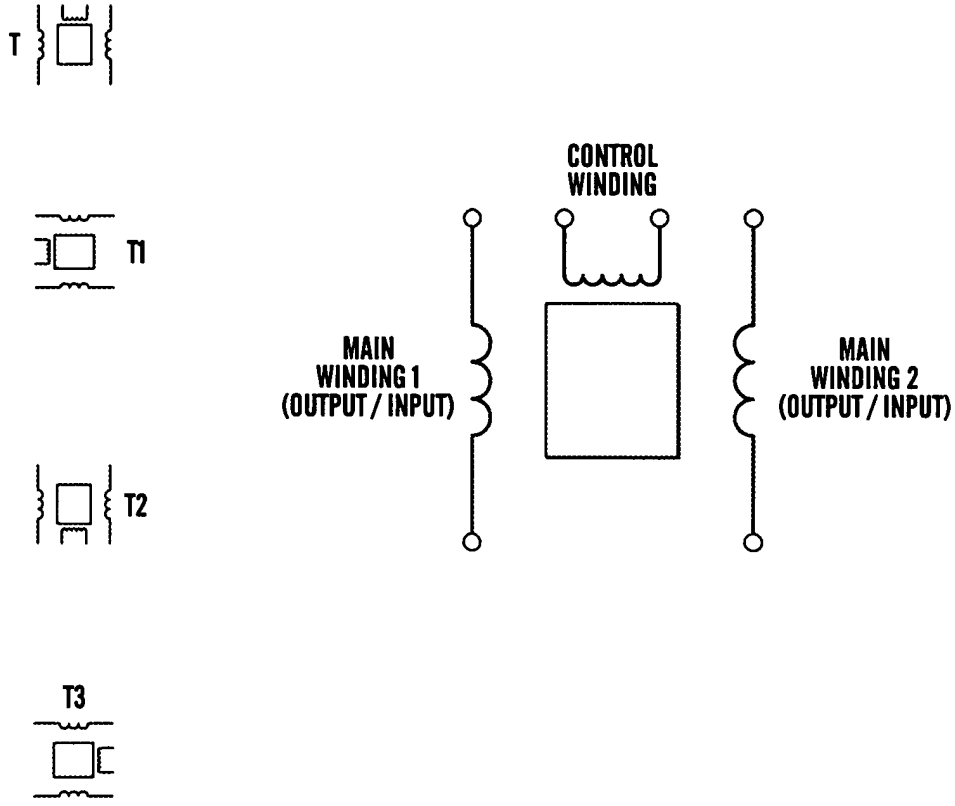

T
T1
T2
T3
CONTROL WINDING
MAIN WINDING 1 (OUTPUT / INPUT)
MAIN WINDING 2 (OUTPUT / INPUT)

Fig.60

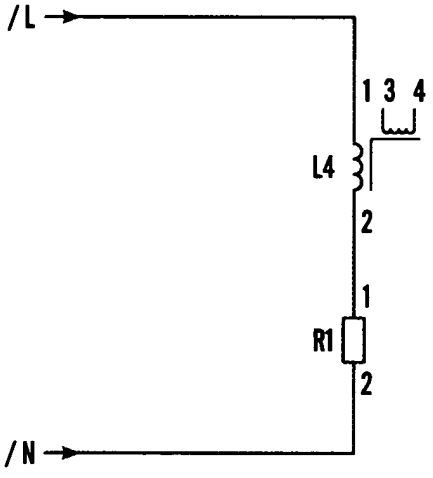

/L
1 3 4
L4
2
1
R1
2
/N

Fig.61

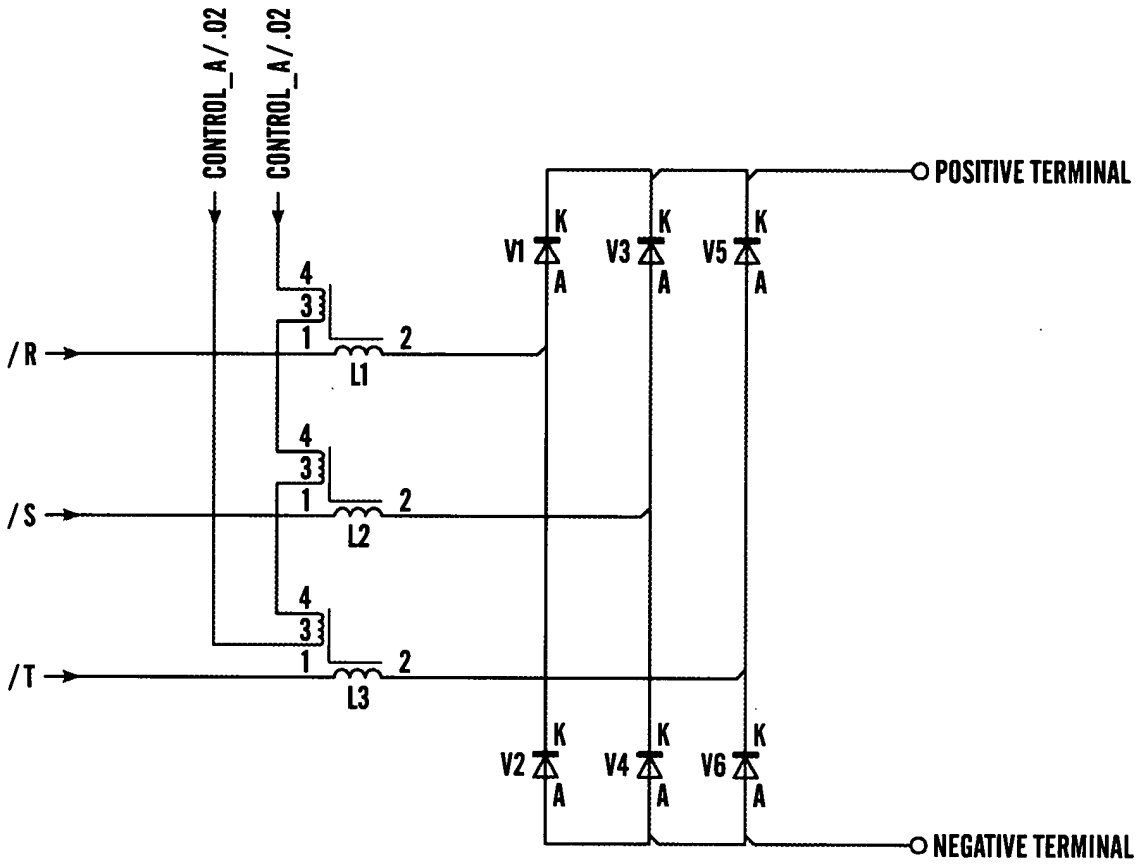

CONTROL_A/.02
CONTROL_A/.02
POSITIVE TERMINAL
NEGATIVE TERMINAL
V1
V2
V3
V4
V5
V6
K
A
/R
/S
/T
L1
L2
L3
1
2
3
4

Fig.62

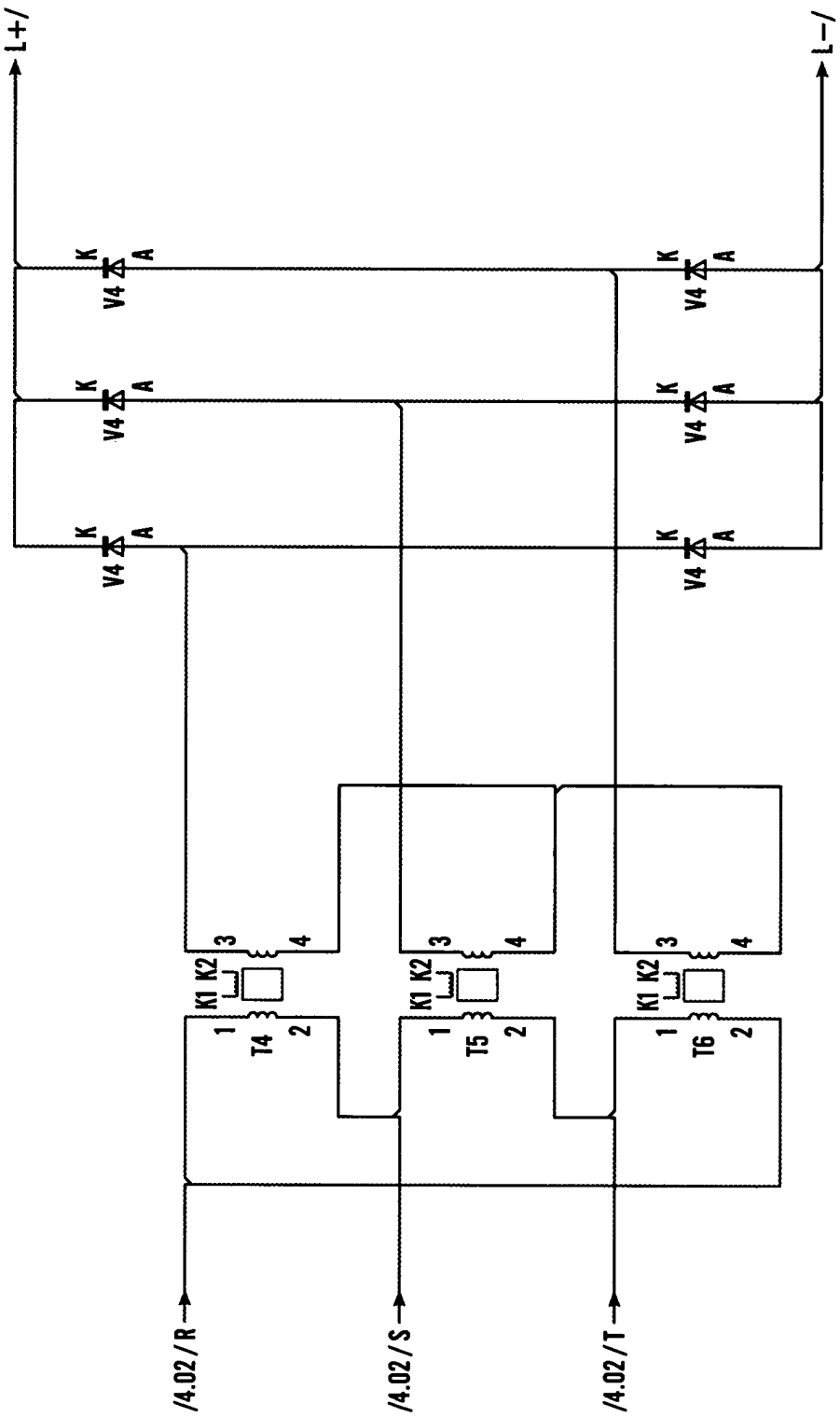


Fig.62a

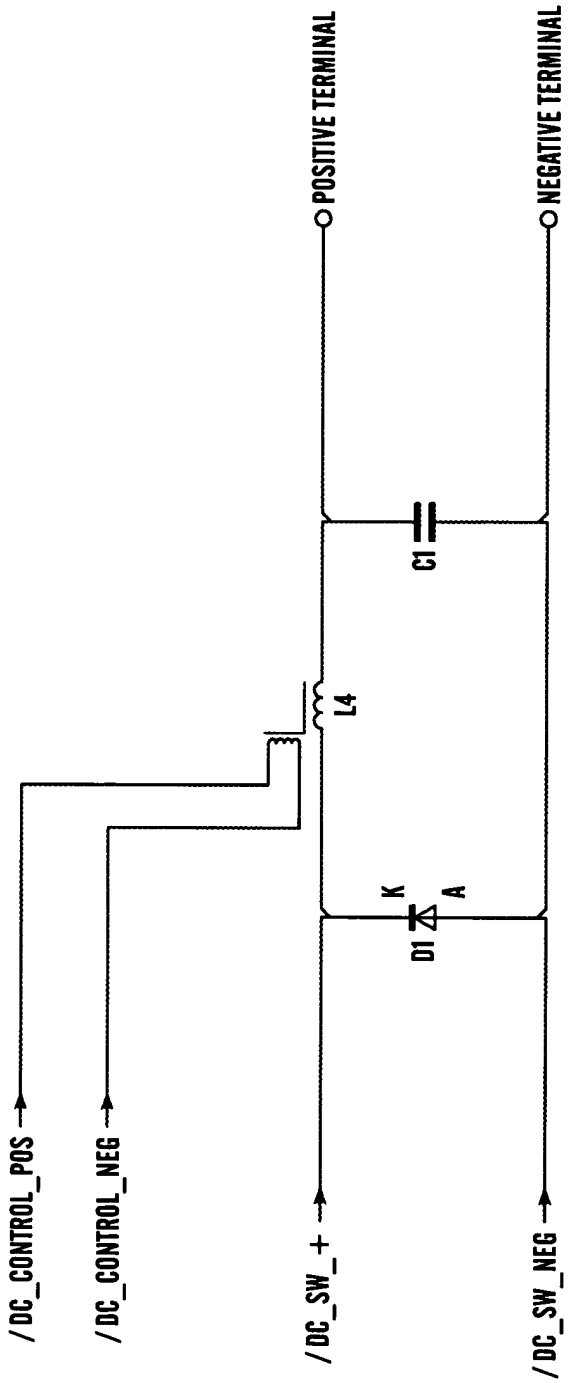

POSITIVE TERMINAL
NEGATIVE TERMINAL
C1
L4
K
A
D1
/DC_CONTROL_POS
/DC_CONTROL_NEG
/DC_SW_+
/DC_SW_NEG

Fig.63

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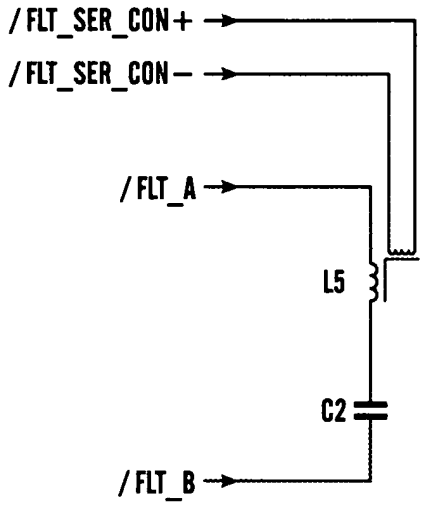

Fig.64a

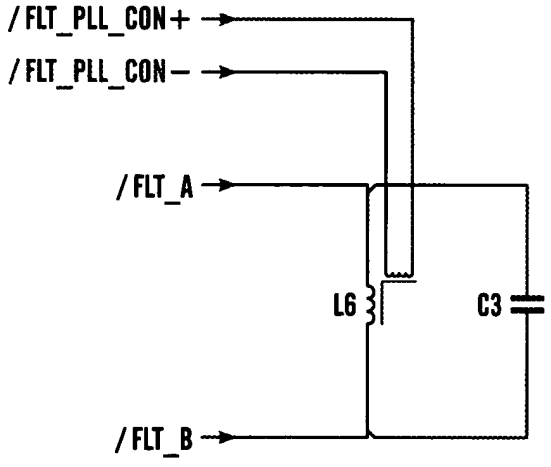

Fig.64b

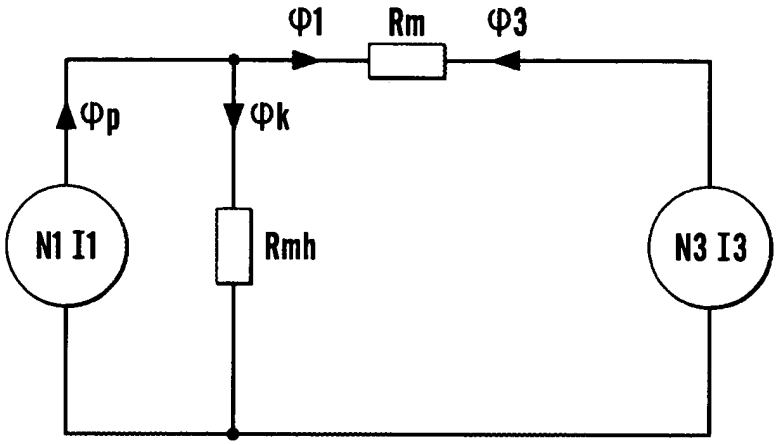

Fig.65a

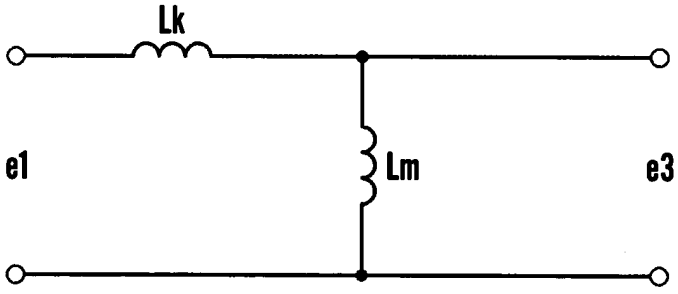

Fig.65b

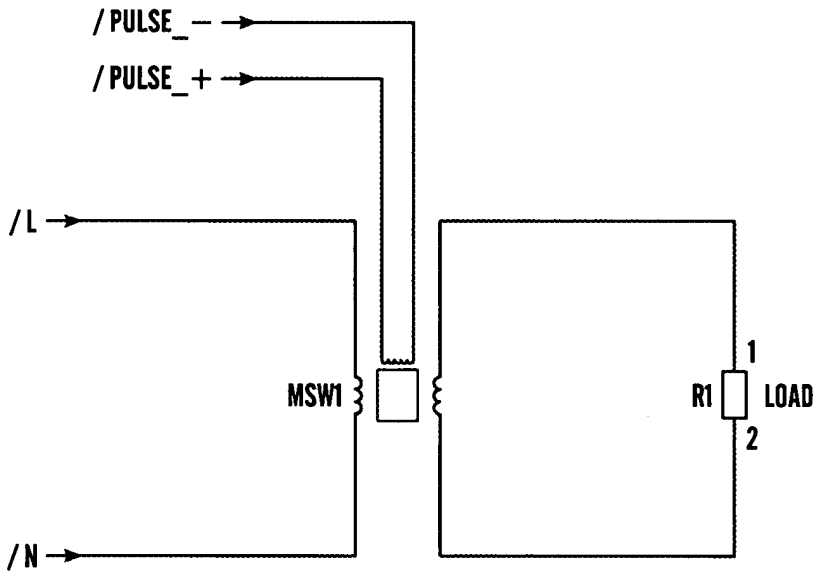

Fig.66

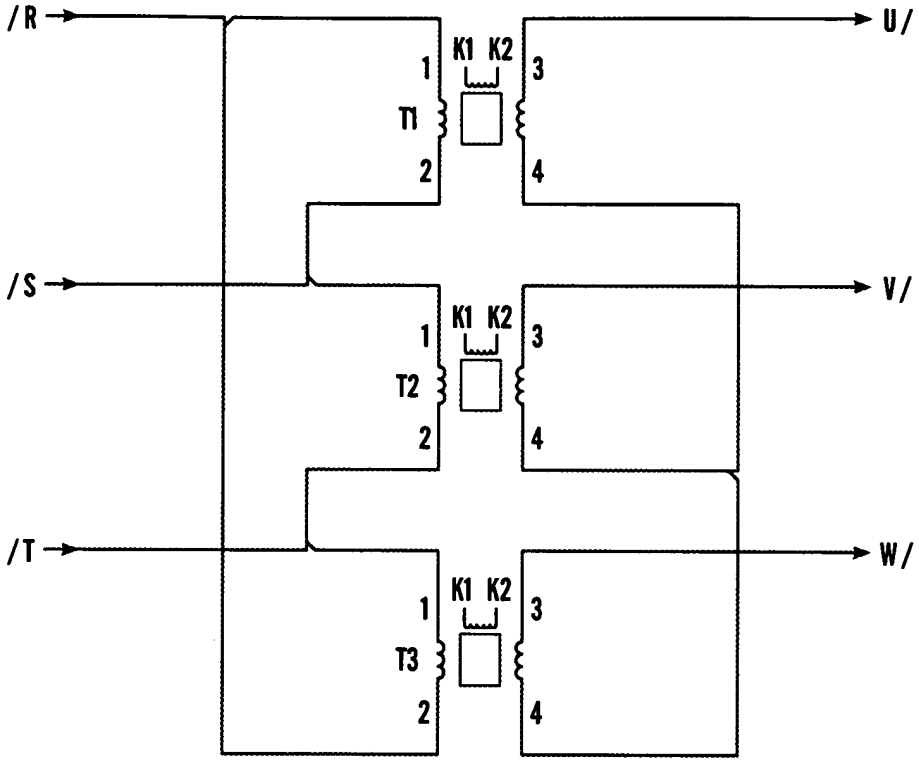

Fig.67

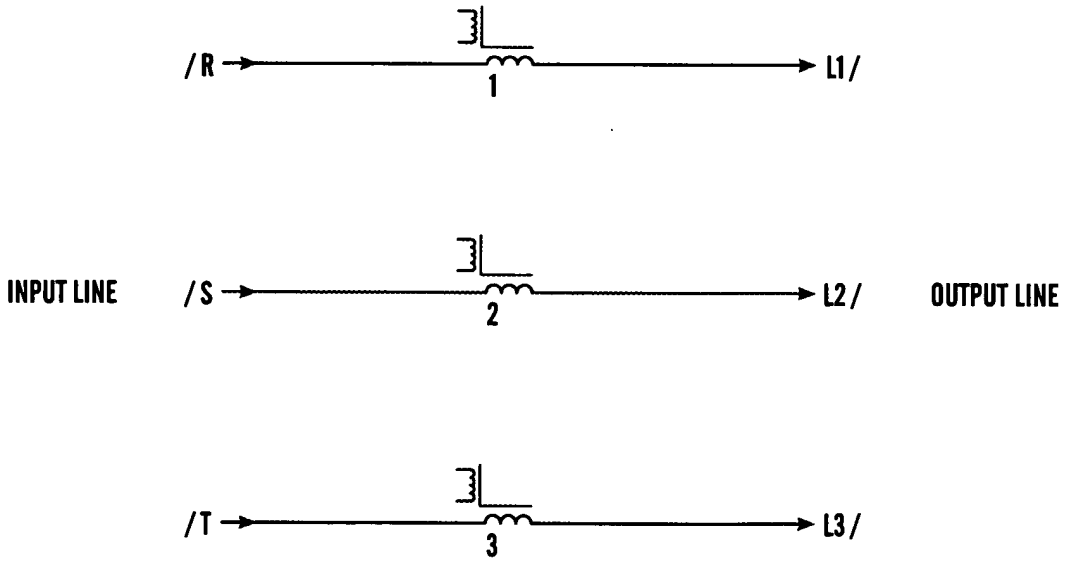

Fig.67a

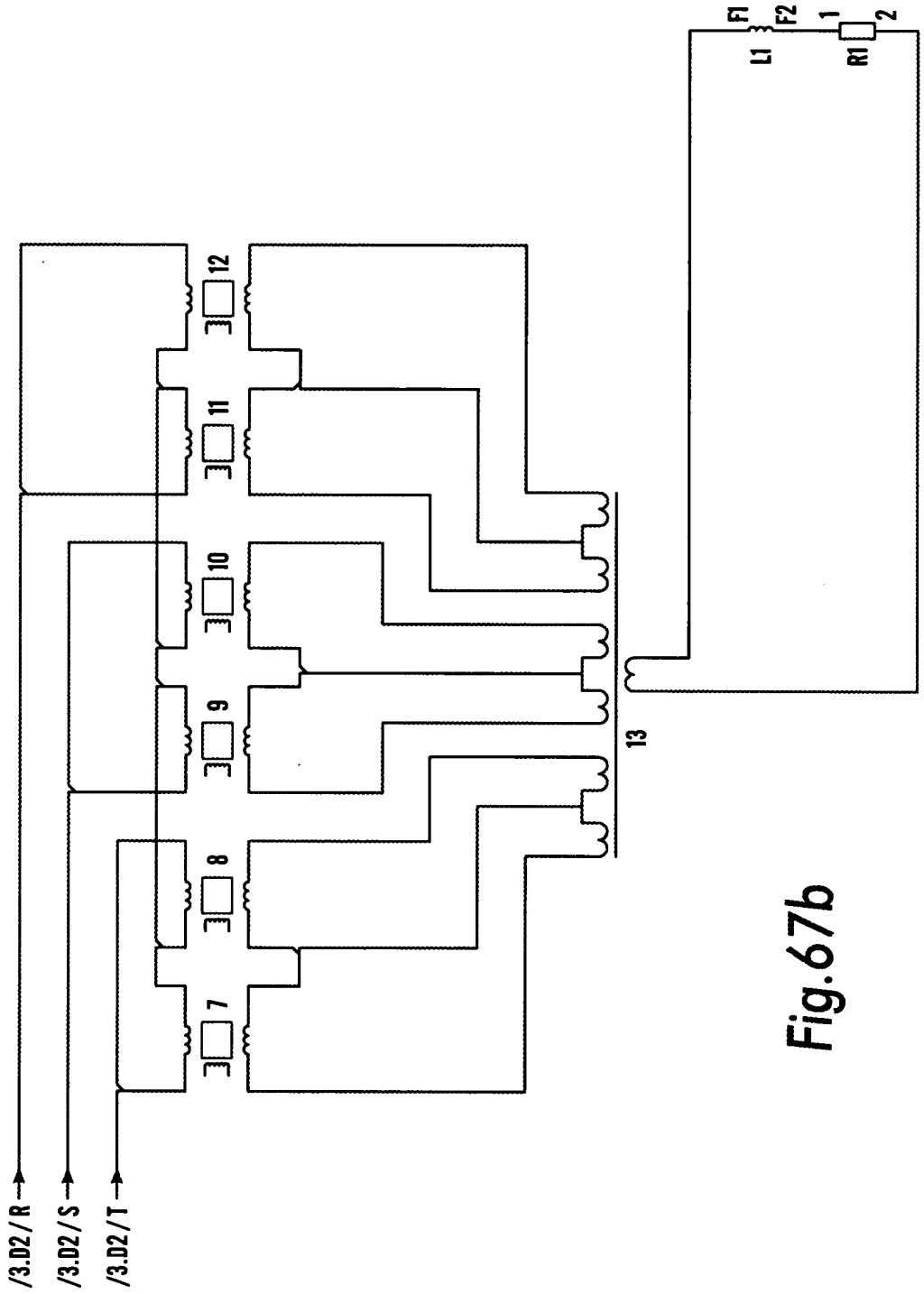

Fig.67b

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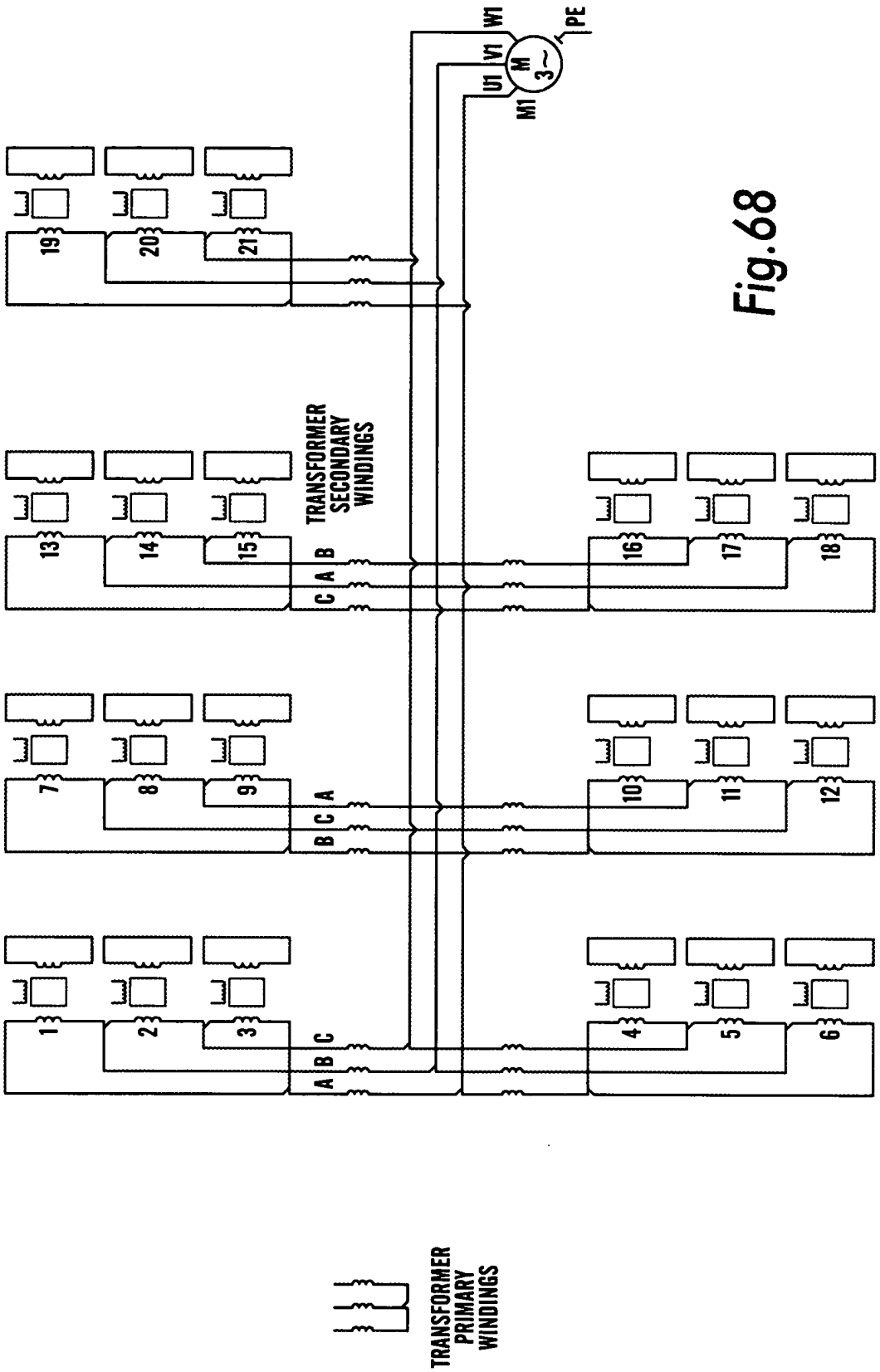
W1
V1
U1
M1
M
3~
PE
19
20
21
TRANSFORMER SECONDARY WINDINGS
13
14
15
16
17
18
C A B
7
8
9
10
11
12
B C A
1
2
3
4
5
6
A B C
TRANSFORMER PRIMARY WINDINGS

Fig.68

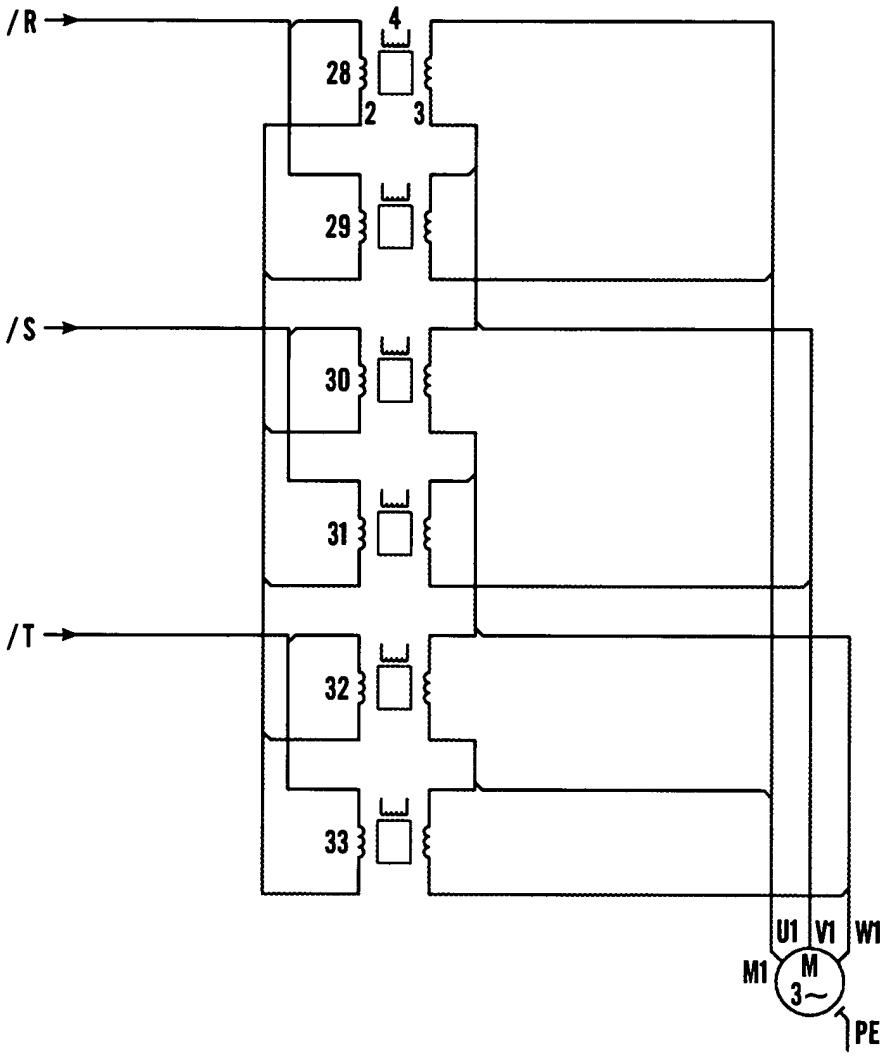

Fig.69

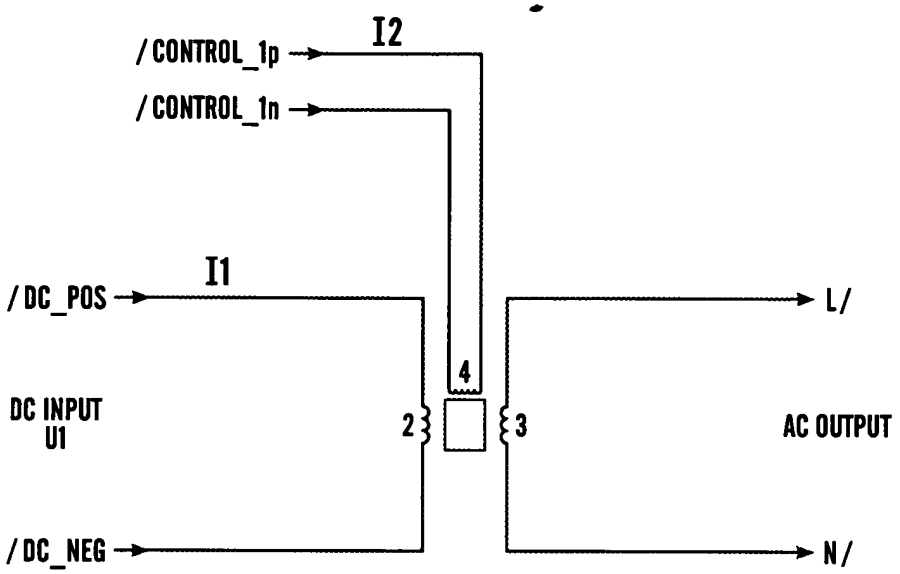

Fig.70

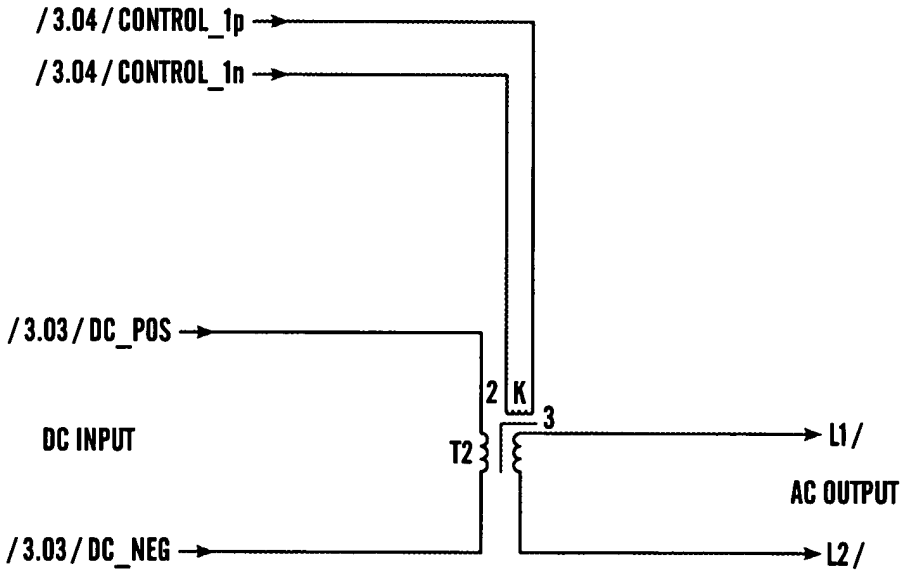

Fig.70a

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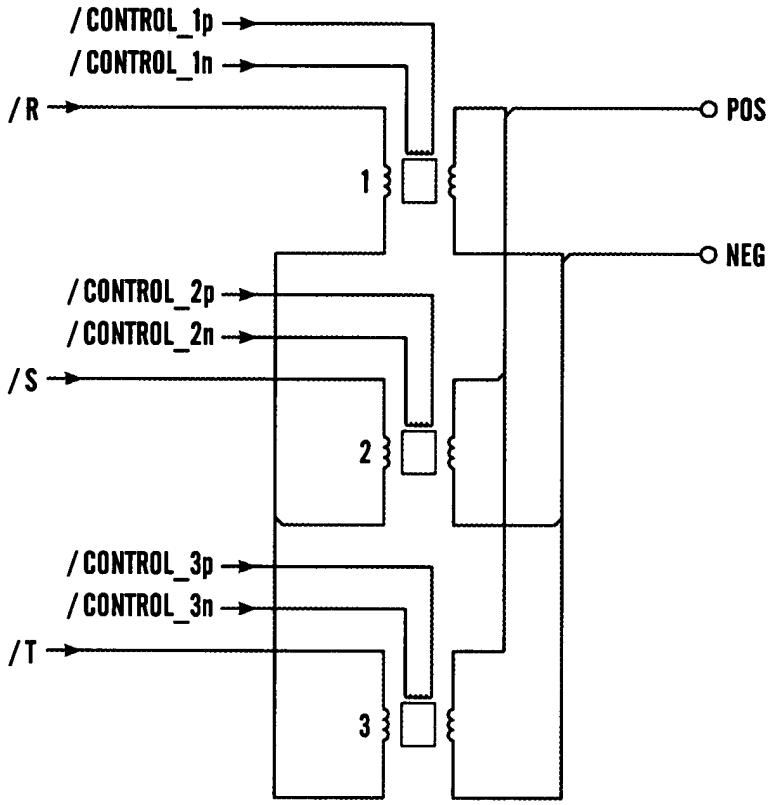
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/CONTROL_1n
/R
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POS
NEG
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/CONTROL_2n
/S
2
/CONTROL_3p
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/T
3

Fig.71

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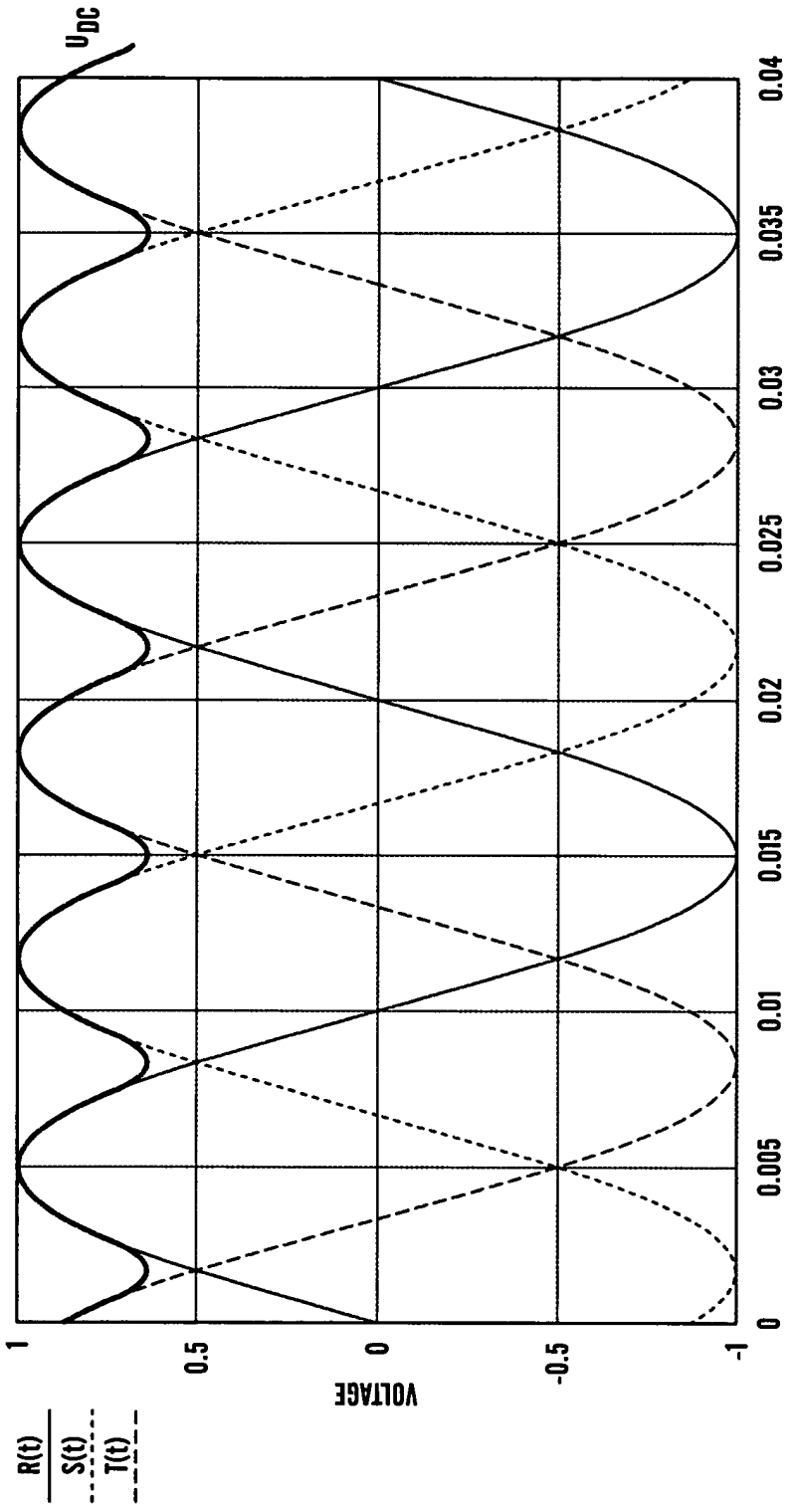
U_{DC}
VOLTAGE
1
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0
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-1
0
0.005
0.01
0.015
0.02
0.025
0.03
0.035
0.04
TIME
R(t)
S(t)
T(t)
TRACE 1
TRACE 2
TRACE 3

Fig.71a

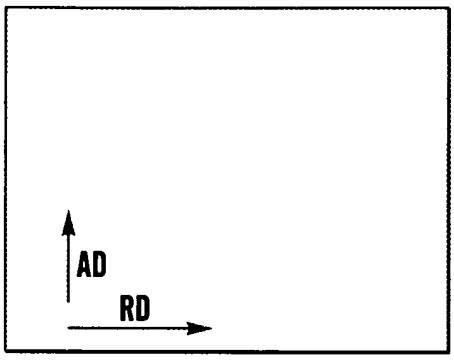

Fig.72

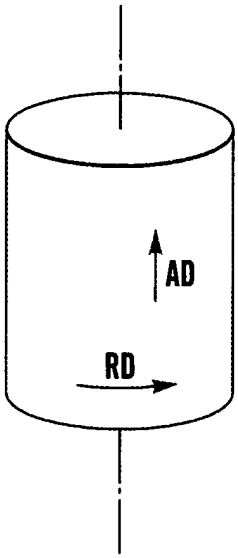

Fig.73

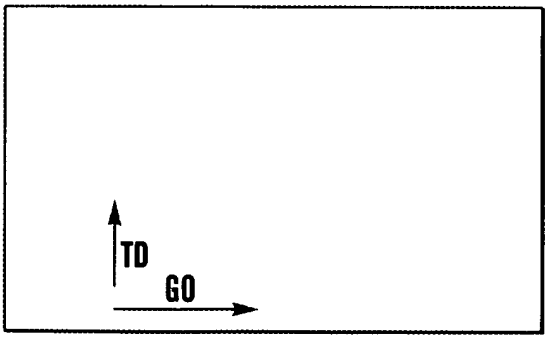

Fig.74

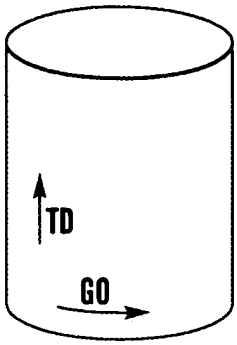

Fig.75

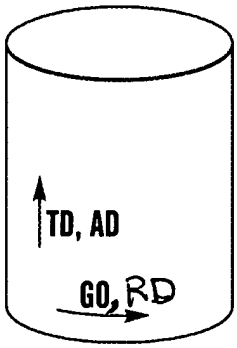

Fig.76

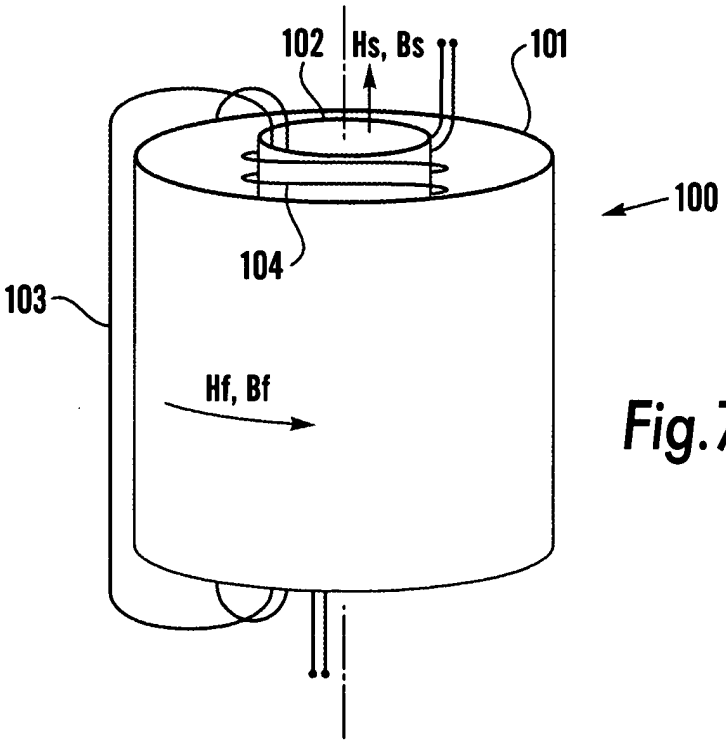

Fig.77

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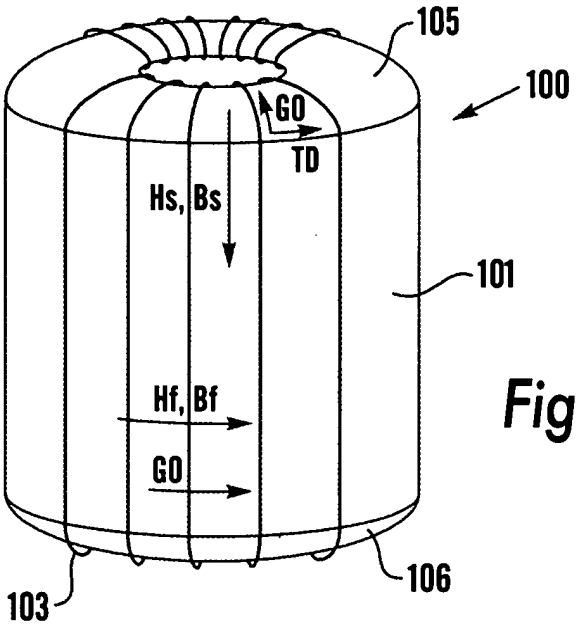

Fig.78

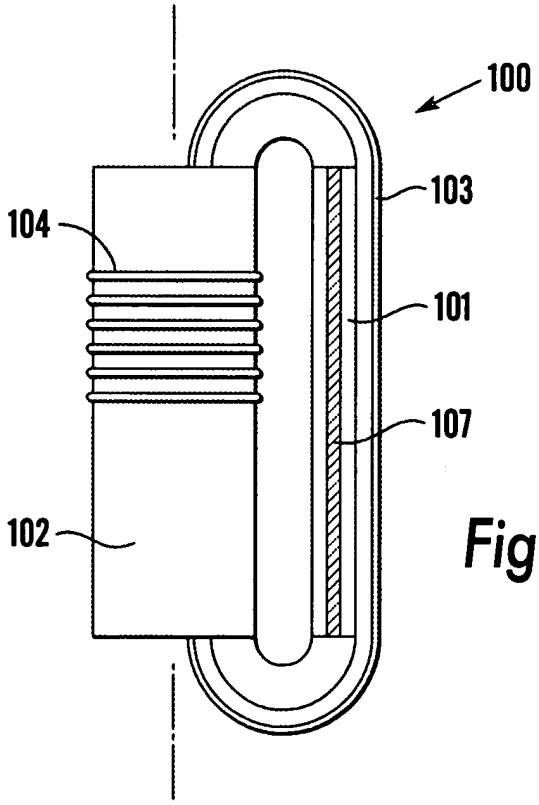

Fig.79

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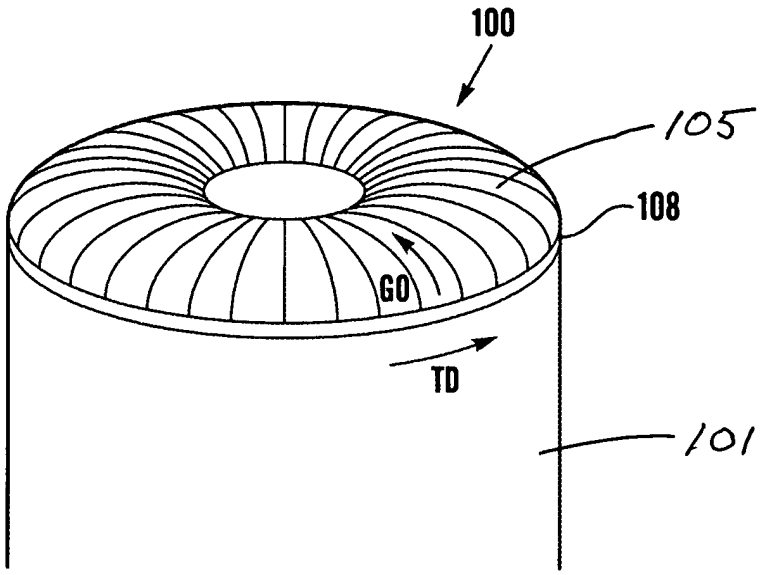

Fig.80

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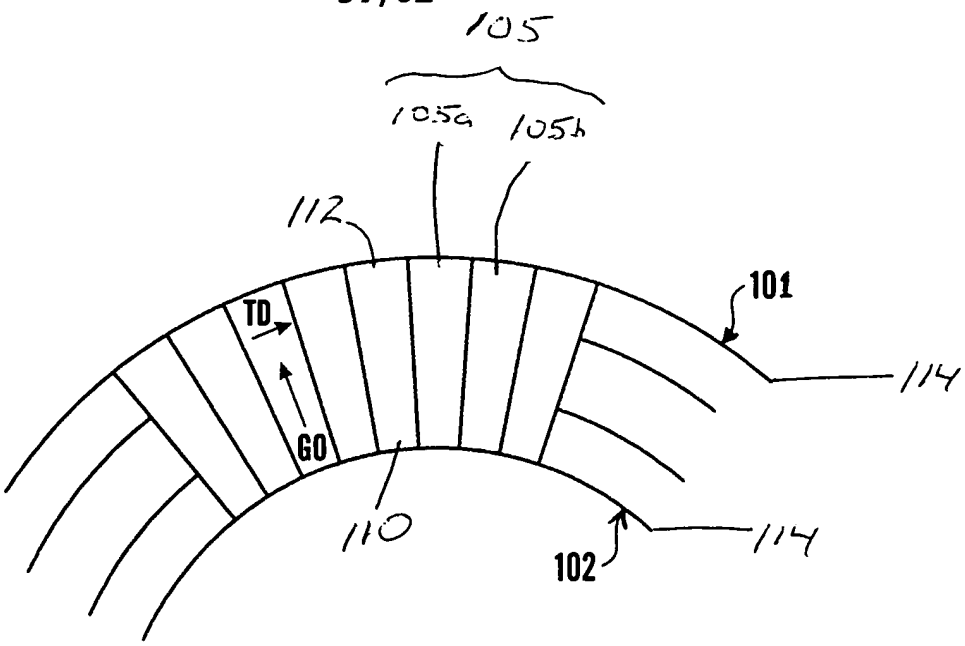

Fig.81

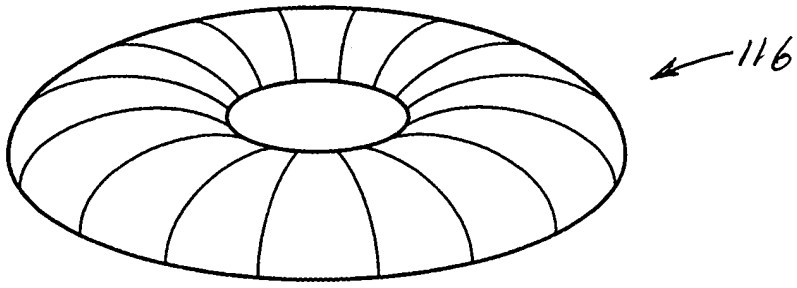

Fig.82

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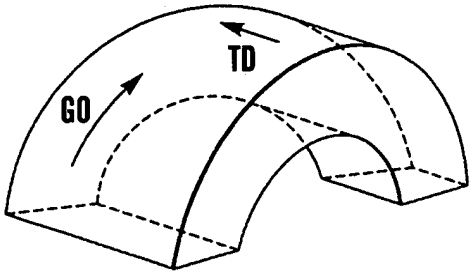

Fig.84

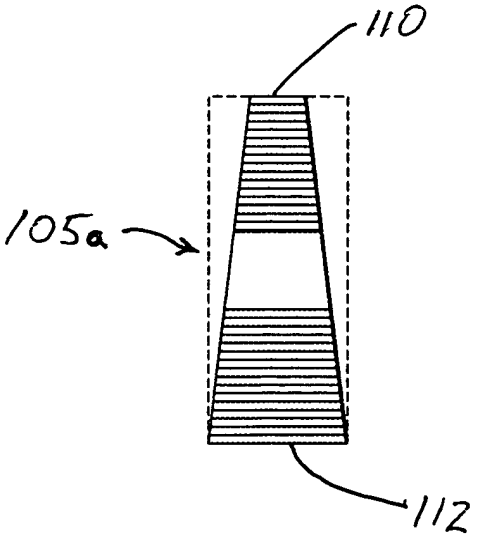

Fig.85

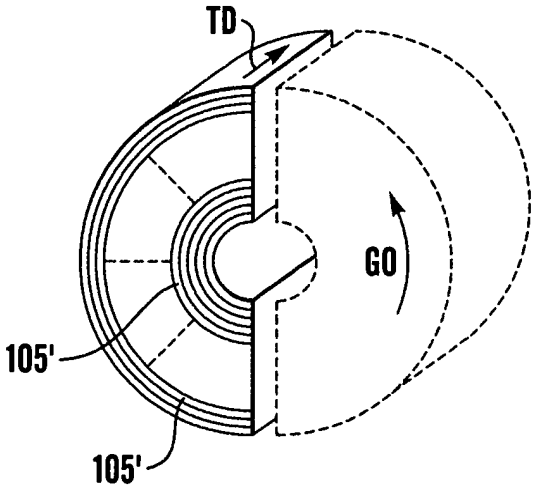

Fig.83

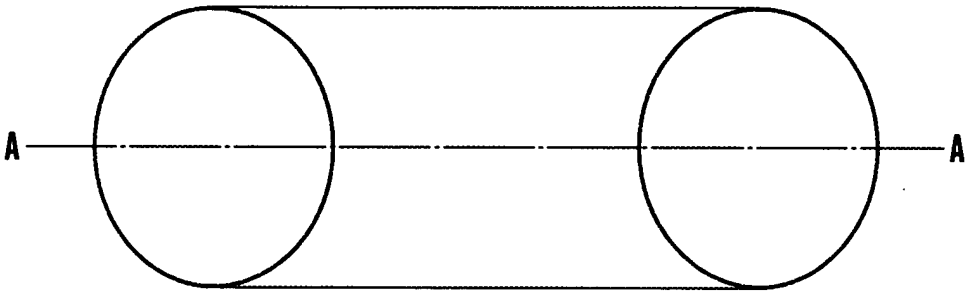

Fig.86

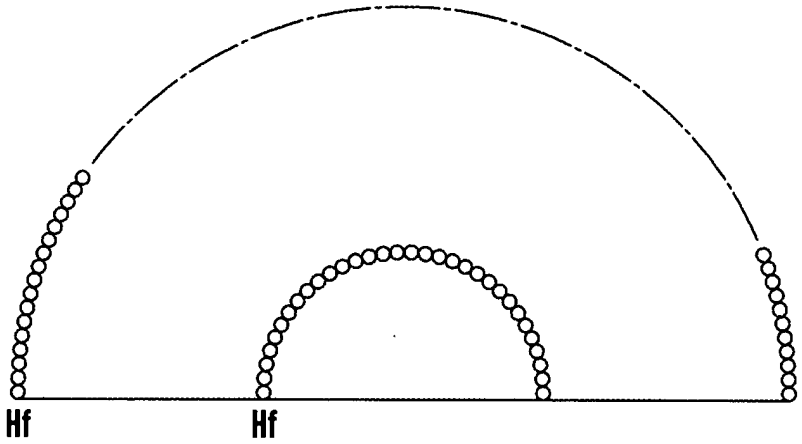

Fig.87

A-A

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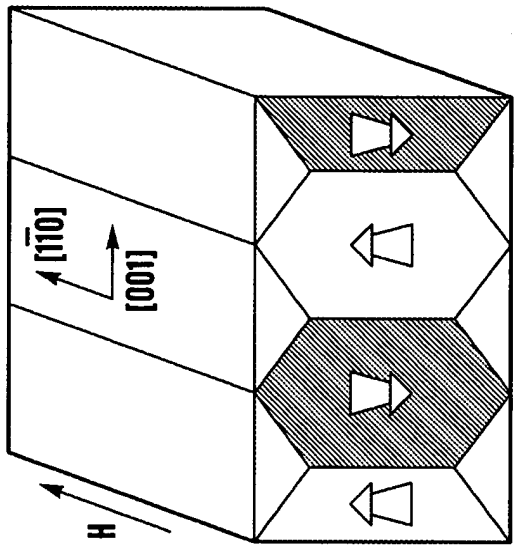

Fig.88b

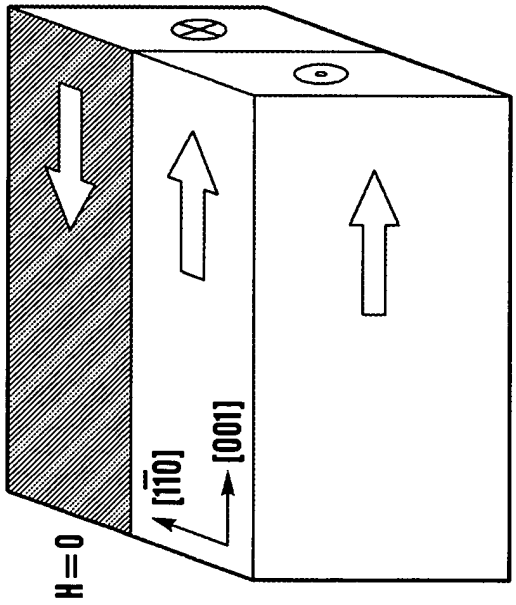

Fig.88a